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Editors' Note

INVESTMENT OF AMERICAN CAPITAL ABROAD

THE FIRST TWO articles in this issue discuss the role of United States foreign investment in world economic affairs. Interest in this subject has been greatly stimulated by President Truman's proposal, in the "Fourth Point" of his inaugural address of January 20, 1949, for a "bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas." As part of this program, "in cooperation with other nations, we should foster capital investment in areas needing development."

The first of the following articles deals with the broader questions of economic foreign policy under present conditions and shows how limited are the alternatives to continued assistance or capital exports from this country. Most other countries, struggling to rebuild or develop their economies, have put into effect various controls over their international trade. These controls are generally designed to assist or protect internal programs, but vary greatly in nature and effectiveness. It is pointed out that some measures, like devaluation, which many feel to be the only solution consistent with progress toward free trade, may for a time have just the opposite of the desired effects. No measure of control can, however, eliminate the need of the rest of the world for our goods, which is the essence of the dollar shortage. A large, continuing program of foreign investment is practically the only means of amelioration; and while each country's consumption must ultimately be measured by its ability to produce, its progress toward realization of its productive potential can be greatly accelerated by American capital.

The second article deals with conditions in a particular area — Indonesia — which presumably would be one of the recipients of assistance under President Truman's "Fourth Point." It outlines existing conditions and problems in this area and indicates that current production falls far short of the volume possible with improved use of the area's resources. From this review, it arrives at the conclusion that opportunities for expansion are favorable enough to produce an adequate return for foreign investors as well as to lift the living standards of the Indonesian people.

"Point Four" and Our Foreign Economic Policy

GEORGE KLEINER
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IN RECENT YEARS the United States has initiated a succession of programs designed to rehabilitate the economies of the war-devastated countries and to promote international trade and the flow of capital between nations. Some of these have been long-range, international programs, such as the Bretton Woods Agreements, which set up the International Monetary Fund and the International Bank, and the International Trade Organization, whose charter has not as yet been ratified by Congress. Others have taken the form of direct loans or grants from the United States to specific foreign countries. These have been based on the realization that neither economic nor social and political stability could be achieved in a world in which war had forced a drastic deterioration in the ability of many important countries to provide minimum living standards, where extreme want was likely to lead to extreme policies. The direct loans to Great Britain, France, and other countries, as well as the European Recovery Program, fall under this heading.

The most recent in this succession of programs is the by now much-publicized "Point Four," propounded by President Truman in his inaugural address of January 20. The first three points in the President's statement on overseas policy consisted of a reiteration of the Administration's determination to stick by the programs already under way (the United Nations, the European Recovery Program, and the Reciprocal Trade Agreements Act) or under active discussion and requiring at that time only the ratification of Congress (the North Atlantic Treaty and the International Trade Organization Charter). Point Four, however, ushered in a new program: that we must increase world trade and elevate living standards by sending technical assistance and private capital from the developed to the underdeveloped areas of the world.

Recently the President has sent his Point Four program to Congress, requesting the provision of technical assistance to the underdeveloped countries and suggesting a plan to promote private American investments abroad, the inducement to consist of the provision of governmental guarantees that these foreign investments and their earnings would be convertible back into United States dollars.

Dollar Shortage Continues

In the public mind, the political, humanitarian, and social aspects of our loans have loomed as the all-important ones; that they were at the same time designed to further our economic objects received little if any consideration. Recent events, however, have brought these objectives into sharp focus.

The United States has consistently aimed at a world in which international transactions would be regulated by a pricing system, rather than by the direct intervention of governments through the allocation of resources and the rationing of scarce foreign exchange. Such a system existed prior to the depression years, and even in the 1930's, though the going grew increasingly rough and more and more countries took refuge in direct controls in order to "balance" their international accounts, the principal trading countries managed to adhere to the main features of the system.

The war, of course, necessitated the introduction of the most stringent controls over both domestic and international transactions; but the postwar years have witnessed very little progress towards their elimination, at least in the international sphere. It was realized, of course, that this would be inevitable during the period of reconstruction, and that the demand for imports would be so swollen, and the ability to pay for them through exports would be so limited, that rationing of foreign exchange, especially dollars, would have to be continued for a while. It was hoped, however, that once the reconstruction phase was more or less completed (and it was immeasurably speeded up, of course, by our very large loans and gifts), most of the important countries would be in a position to drop their controls.

By now, the job of reconstruction has been more or less completed. In fact, in the Marshall Plan countries (which comprise the most important group of trading countries in the world) production is currently running well above prewar. Nevertheless, the Economic Cooperation Administration has failed in most of its attempts to induce these countries to drop their controls over foreign trade and services.

In recent months the international economic position of Great Britain has deteriorated sharply. Exports have fallen off and dollar reserves, which have been dipped into to pay for continuing imports from the United States, have been dwindling at an alarming rate. The result has been the announcement that imports from the United States, which have been kept at what was believed to be the lowest possible level, will be curtailed still further. This will probably serve to make the British all the more firm in their stand that in view of the continuing dollar shortage, the Marshall Plan countries are not as yet in a position to drop the controls and bilateral arrangements that have characterized their postwar trade.

The dollar shortage has grown worse in the past few months because the decline in production in the United States has resulted in a substantial drop in our imports, which has meant a shrinking supply of dollars available to foreign countries for their purchases of goods and services in this country. Any continuation of this trend is likely to lose for us even those few countries (such as Belgium and, to a more limited extent, France) that sided with us in our determination that the Marshall Plan countries return to a competitive, multilateral system in which prices, and behind them private enterprises, rather than governments, would regulate the volume and direction of international transactions.

The question arises whether or no our objectives can be attained withi the next few years and if not, wha conditions may be necessary for thei attainment. It might be argued tha the existence of these objectives in th back of our minds, so to speak, can hardly be harmful, since the worst that can happen is that the rest of the world finds itself unready for them at the anticipated date and their fulfillment is merely staved off for a time. This, however, would be true only if the policies undertaken by foreign countries were entirely independent of our pressure on them to move in a specific direction and to move as quickly as possible. It may be that that pressure in itself will call forth policies which, from a longer-range point of view, will be injurious to our ultimate objectives of a free, expanding world economy and a stable, democratic world society. What, then, are the prospects of our economic objectives being attained within the relatively near future?

Effects of Trade Restrictions

Our general economic objective, as was stated above, is to have at least the principal trading countries return to a competitive, multilateral system in which the volume and direction of international transactions would be regulated by prices, and behind them private enterprises, rather than by governments. To achieve this general objective, we have attempted to secure agreement on the part of most countries to three rules or practices: unrestricted convertibility of national currencies from one into another for purposes of merchandise or service payments in foreign countries; non-discrimination in foreign trade; and the elimination of quantitative restrictions.

Convertibility of currencies ensures multilateral payments and renders unnecessary the attempt of each country to balance its accounts with every other country directly. Thus the French, in selling merchandise to the British, would earn sterling which, if it were convertible, they would be able to sell in return for any other foreign money for the purchase of goods and services in that third country. Multilateral payments thus provide the widest possible scope for traders to deal in whatever markets they find the most profitable.

In a world where bilateral arrangements predominate, traders are frequently limited to buying in those countries whose money happens to be in sufficient supply to their own country, regardless of whether or not the particular goods or services are the most desirable on a price or quality basis. Quite frequently essential imports cannot be secured at all if they are produced only in those countries whose currency is unduly scarce in the foreign exchange markets or even if the particular pair of countries happens not to have come to some payments agreement. Sellers, on the other hand, will frequently be reluctant to dispose of their products in countries whose currencies are "soft" in the foreign exchange markets even if, at the official exchange rates, prices obtainable in the particular market are attractive; currencies are soft when the demand for foreign exchange exceeds the supply by a wide margin and when convertibility is therefore either impossible or strictly limited.

Bilateralism therefore has the effect of reducing the volume of international trade and of limiting the usefulness of whatever trade does take place. This, in turn, cuts into the productive efficiency of the countries concerned. Especially has this been true, in the postwar years, of the Marshall Plan countries, since their productive fabric was developed in a period when trade was virtually free of bilateral controls and their living standards came to depend on a large and sustained international exchange of goods and services.

The elimination of quantitative restrictions and discriminatory arrangements would provide the same advantages as convertibility of currencies. Quantitative restrictions, in fact, accomplish in the realm of actual trade what exchange restrictions are designed to accomplish in the realm of international payments; one can be a substitute for the other. Whereas exchange restrictions ration payments, hence purchases, on the basis of either the relative scarcity of the specific foreign currency needed to effect payment or the relative essentiality of the particular good or service to be imported, quantitative restrictions can effect exactly the same ends by the licensing of imports. They are, in fact, even more adaptable to other ends as well.

In the 1920's and particularly in the 1930's quotas were frequently instituted as a means of limiting imports of specific commodities in order to protect the home producer or as a means of redirecting trade on a country-of-origin basis. In this respect they did what tariffs are designed to do, but much more efficiently: whereas tariffs raise the prices of imports to the consuming country, they do not control quantities directly (short of being prohibitive) but leave the decisions as to whether or not to import up to the private traders involved. In the case of tariffs, moreover, discrimination as between countries must generally be accomplished through a complex arrangement of preferences that is easier to analyze, evaluate, and lodge official complaint about than quantitative controls, although much more cumbersome to change in the face of changing circumstances.

In the case of exports, quantitative restrictions can implement exchange regulations and make them more effective. Most countries, in their exchange control regulations, require exporters or sellers of services to turn over all of their foreign exchange receipts to the central authorities, in return for local currency. This must be done if the controlling country is to acquire a stock of foreign exchange to pay for essential imports. Through the use of an export licensing system, however, exports can be directed towards those particular foreign countries whose currencies are in relatively short supply, whether or not those markets happen to be the most lucrative from the point of view of the private sellers.

In this manner the central authorities not only acquire control over all foreign exchange accruals, but they can influence the composition of that foreign exchange as between currencies for which they are particularly hard pressed ("hard" currencies) and currencies that are in relative oversupply and subject to particularly limiting convertibility regulations ("soft" currencies).

It will be evident that both exchange restrictions, which control the convertibility of any one currency into another, and quantitative restrictions, which control quantities of imports and exports directly, may involve discriminatory practices. In a non-discriminatory world, buyers and sellers are guided only by price considerations. Buyers will buy in the cheapest markets; sellers will sell in the dearest markets. This is, of course, an essential condition for the workings of a pricing system.

Even if exchange and quantitative restrictions were effectively barred, however, discriminatory practices in international transactions would still be possible. Some discrimination has always been present: one of the purposes of economic imperialism, in fact, was to secure preferential treatment for the controlling country. Today, however, there is much more scope for discrimination. The growth of state trading organizations and of bulk purchasing schemes tends toward the consummation of international deals that by-pass immediate price advantage in favor of either political or long-run economic gain. Several foodstuffs- or raw-material-producing countries, for example, have been willing to sell in bulk to important consuming countries (principally Great Britain) at less than the current market price, in return for the assurance of a market whenever the particular commodities are in danger of being in oversupply.

Such arrangements, of course, are fairly common even within the domestic economy. They tend to distort the workings of the pricing system, as any monopolistic practice will. In international trade, however, they are in danger of becoming considerably more common.

This is by no means an exhaustive analysis of the dangers of bilateralism, and of direct controls over the international economy. But enough has been said to show that the general economic objective of the United States, as an objective, is most desirable. Given the distribution of productive resources and relative efficiencies as between countries, a multilateral, non-discriminatory system would maximize both the volume of world trade and the effectiveness of that trade in enhancing real income.

Agreement on the general objective, however, by no means implies agreement on the methods for achieving it. And it is precisely on this point that a sharp break has developed among economists, governmental policy-framers, and, to some extent, businessmen. Strictly speaking, this break is not a new one, nor is it by any means confined to the field of international economics. Baldly stated, it is the break between those who would place full reliance on the pricing system and those who believe that while the pricing system can be entrusted with effecting the relatively small, day-to-day adjustments of a "normal" economy, it is ineffectual for the very large changes in resource allocation and trade-pattern shifts that are needed today.

Nor do the proponents and the opponents of the "let prices do it" attitude line up on a country basis. Both camps can be found in almost all countries where the issues have been stated with relative clearness.

In the field of international economics, the planners and controllers have held out much more firmly than in the field of domestic economics. Whereas there has been a fairly general disposition to decontrol domestically, there has been very little disposition in most foreign countries to decontrol international transactions.

On a governmental policy level, moreover, the United States has definitely taken the lead in urging decontrol as rapidly as possible. In a number of instances, in fact, where foreign governments have sided with us on this issue, the decision to do so was based on the opportunistic desire to obtain aid or, where acquiescence seemed impossible to secure otherwise, by the judicious shifting of policy-makers. It is important, therefore, to examine our policies in the light of the present world economic situation in order to determine, if possible, whether they really are best suited to achieve the kind of world most of us are agreed we want.

Our policies are based largely on the view that "If it were done when 'tis done, then 'twere well it were done quickly." We feel that while the controls are retained trade and real income are lower than they otherwise would be, and that, since decontrol will hurt for a short period no matter when it is undertaken, the time to take at least the first steps is now, especially since production in the principal countries is well above prewar. The opposing view holds, first of all, that multilateralism maximizes trade and income, *given the world distribution of resources, especially capital,* but that the resumption of multilateralism now would necessitate adjustments that would hamper the accumulation of capital in the needy countries, thus perpetuating their relative inefficiency in production and consequently their relatively low living standards; secondly, that the workings of the adjustment process are so slow and imperfect in international transactions that living standards would have to fall rather sharply, with consequent socio-political dangers; and thirdly, that fluctuations in the level of the United States production and prices will unbalance the international transactions of most foreign countries and necessitate the resumption of controls, so that the present period of uncertainty with respect to developments in United States business activity is hardly the time to institute decontrol. The crucial question, therefore, is: What are the adjustment processes that would be necessitated by decontrol and how are they likely to work out at present?

Adjustments to Imbalance

When imbalance occurs in international transactions and there are no direct controls on trade or payments, the adjustment process involves a change in price, as it does in any market when demand and supply at a given price are unequal. Analyzing the process only from the point of view of the country with a deficiency of foreign exchange, what is needed is a change in price such that the amount of foreign exchange demanded would decrease while the supply of foreign exchange would increase to the point where they are equal.

The demand for foreign exchange arises from the desire to purchase goods, services, or investments abroad, to repay past borrowings, or to build up foreign exchange reserves; while the supply of foreign exchange arises from the sale of goods and services to foreign countries, or from loans, the liquidation of foreign exchange reserves accumulated in some prior period, or capital repayments. Confining our attention for the present to trade in goods and services, what is needed, therefore, is a change in price that will decrease imports and increase exports sufficiently to restore balance.

In international transactions, there are two ways in which "prices" can be changed. One is the obvious case where the price level of the deficit country is reduced, causing imports to decrease because their prices are now relatively high, and exports to increase because their prices are now relatively low, to foreigners. This is the mechanism of adjustment called for under fixed rates (the international gold standard condition).

Experience with this mechanism of adjustment in the inter-war decades was such that it is safe to say it will never again be tried knowingly. If the deflation of prices is to have any important effect in shifting the trade balance, the deflation must be substantial. But a substantial deflation is almost certain to lead to decreased investment and a general decrease in output and employment. The waste involved in the present arrangements of controlled trade and bilateral deals is probably slight indeed compared with the waste through the reduction of output that is likely to result from a sharply deflationary policy.

Such a policy today would be especially foolhardy when we appear to be shifting from a sellers' to a buyers' market; if deflation occurs in any of the more important, industrialized countries, it is not likely to be by design. Finally, even if it is attempted, a deflationary policy may not be able to achieve its purpose in the face of rigid wages and other costs and administered prices; to the extent that the policy of contraction fails to lower prices, it will obviously have no effect on the trade balance. (There are other reasons as well why this method of adjustment may not work either in theory or in practice, but since the second method of changing prices in international transactions is subject to the same reservations, they will be discussed later.)

Instead of deflating its price level, however, the deficit country could reduce its exchange rate. The United States has been urging a number of the Marshall Plan countries to make just such a move. A reduction of its exchange rate by a deficit country means that (non-devalued) foreign currencies become relatively expensive, hence imports are discouraged; whereas, the deficit country's currency now being cheap in terms of foreign (non-devalued) currencies, exports will increase.

No attempt will be made in this paper to provide an exhaustive analysis of the effects of devaluation under all possible circumstances; for the purpose at hand, it is sufficient to consider the most probable effects under present circumstances. The proponents of devaluation point out that the present exchange rates of the Marshall Plan countries are unrealistic; that, in terms of purchasing power relative to the purchasing power of the dollar in the United States, the currencies of the particular countries are not worth as much as the exchange rates would indicate. It is this unrealistic pattern of rates, according to this view, that causes such a world-wide scarcity of dollars: a deficit or a surplus in any market should be conceived of as being in terms of a particular price, and the dollar shortage is the result of the too-low price of the dollar in terms of foreign currencies, now artificially maintained by direct controls.

When the International Monetary Fund was about to commence operations in 1946 and requested that member countries submit their initial pars of exchange, many economists felt even then that the rates should be reduced. In view of the world-wide sellers' market and the inability of most of the European countries to produce more exports, it was conceded that lower exchange rates were not likely to increase the supply of foreign exchange earned (particularly dollars). Similarly, the need for imports, especially from the dollar area, was so strong that lower exchange rates were unlikely to reduce the demand for dollars, with the result that a more realistic pattern of rates in terms of relative purchasing power or price levels might have accentuated the dollar shortage instead of alleviating it.

At the present time, however, many economists believe that the shift to a buyers' market has brought price considerations back into the foreground in decisions to buy or sell, that productive capacity in most countries has increased sufficiently to permit an increase in exports, and that in a competitive world exchange rates should again be made to perform their regulatory function.

The effect of devaluation will depend on a number of factors: the composition of a country's exports and imports; the amount of slack it has in terms of both labor and plant that could be shifted to export industries; and the willingness to reduce living standards and check increases in wages and other costs that may threaten as a result of the devaluation.

In this connection, two important factors must be stressed. First, to the extent that devaluation results in an increase in domestic prices and costs, its effectiveness in redressing the balance-of-trade deficit is thereby reduced. If money incomes increase proportionately to the devaluation, then the demand for imports will be unaffected; and if export prices increase proportionately, the prices of exports delivered in foreign countries will be the same as before the devaluation took place. Devaluation will by no means *necessarily* increase costs and prices at home, but under certain circumstances it is likely to. Secondly, to the extent that there are no unemployed resources in the country, it will be all the more difficult to prevent domestic costs and prices from increasing. Under conditions of full employment, exports cannot be increased unless resources (labor, capital, and materials) can be shifted from the production of other goods and services to the export industries, and it is difficult to achieve such a shifting, in a free society, without raising the payments for these resources and hence the prices of exports. Even where some unemployment, both of labor and plant capacity, exists it may be difficult to shift such resources into export industries.

Another factor that would tend to reduce the effectiveness of any given amount of devaluation in most of the

Marshall Plan countries is that their export industries depend heavily on imported raw materials. In terms of the devalued currency, the cost of these materials would rise, thus raising export prices at least to some extent. This, of course, can probably be taken care of in the calculation as to the extent of the devaluation required.

More difficult to cope with, however, is the problem of consumer imports considered more or less essential. When a country imports a substantial proportion of its foodstuffs, devaluation will increase the cost of living. If incomes are increased to compensate for this increased expense, the devaluation has had no effect, at least in this respect; for devaluation to be successful, the government must be adamant in its policy of preventing money wages from increasing. In a non-authoritarian society, this may be difficult to achieve.

Even if money wages are kept stable, however, expenditure for imported foodstuffs is likely to increase, since the demand for foodstuffs tends to be inelastic with respect to price. Proponents of devaluation would argue that this is unfortunate for the country's balance of trade but not disastrous, since the increased expenditure for imported foodstuffs will decrease expenditure on locally-produced goods and services, thus yielding up resources (through temporary unemployment) to export industries. In a backward economy where the bulk of the population spends all of its current income on consumption, this reasoning is valid. In most of the Marshall Plan countries, however, savings out of current income could be reduced or past savings dipped into, with the result that current expenditure on domestic output would be maintained (at least to some extent) and exports production could be stepped up only at higher costs and prices.

Finally, it could be argued that decreased imports of foodstuffs, by cutting down markets, will decrease their prices in the supplying countries, and this argument becomes all the more cogent in view of the fact that the Marshall Plan countries are the principal buyers of agricultural products in the international markets. In the pre-depression world, such a development was likely. Today, however, use of controls over output and prices in the principal food-producing countries is highly probable, so that the Western European countries are not likely to reap much benefit from their position as major buyers. (The continuation of such controls, of course, is an important weapon and a valid argument in their defense of their own control schemes.)

The upshot of this is that under conditions of more or less full employment, it would be very difficult for most of the Western European countries to stem the inflationary pressures that would arise as a result of devaluation.

Even if inflationary forces were stemmed, however, and export prices in terms of domestic currency remained stable, a significant increase in the quantity of exports would probably prove very difficult to achieve in the short run. The demand in foreign countries for the goods and services now exported by the Western European countries is probably not very elastic with respect to prices. The level of imports in the United States, for example, is mainly dependent on the level of industrial production; and though this lack of sensitivity to the prices of our imports is particularly true in the case of raw materials and semi-manufactures, even our demand for European manufactures is influenced largely by our income level.

It can be argued that even if devaluation were not too successful in increasing sales to the United States, it would enable Western Europe to compete more effectively with us in other markets, such as Latin America, Canada, and the Far East. This would certainly aid in reducing the world-wide dollar shortage, and it is along these lines that a solution must ultimately be found.

Before the war, a multilateral system was possible largely because the United States did not have a surplus with almost all countries (as is the case today). The United States was a substantial net importer from Asia and Africa; there was consequently a net payment of dollars to the European dependencies in the Far East and Near East, and from the latter to Europe, in payment for manufactured goods and services. Europe was thus able to acquire the dollars she needed to meet her customary deficit in trade and service transactions with us. For Europe to displace us in third markets, however, what is needed is an increase in the range of exports, either the pushing of products already produced for the domestic market or the development of new markets. This, however, would necessarily take time.

It would not be sufficient, moreover, for Europe merely to recapture markets lost during and after the war. Before the war, the principal Western European countries received substantial amounts of foreign exchange as income on investments abroad and for the provision of banking, insurance, and other financial services. These receipts have decreased sharply, partly because of the liquidation of foreign assets during the war, partly because of political strife. To pay for the prewar level of imports, therefore, exports at present would have to be considerably above prewar (and even higher than that when interest and capital repayments on recent borrowings from the United States and Canada commence). For Western Europe to develop new markets in the non-dollar world will not only take time, but raise the additional problem of how such exports are to be paid for, a problem we shall return to shortly.

Thus far, the effects of devaluation have been considered only with regard to merchandise trade and service transactions. In the case of financial transactions, including interest and dividends on foreign investments, devaluation is likely to have adverse effects on the Western European countries. On outstanding debts owed to foreign countries and denominated in the foreign currency, such as the dollar loans of the postwar years, it would mean an increase in the amount of the debt and interest payments in terms of the devalued currency, thus increasing the budgetary difficulties involved.

In the case of foreign investments owned by the devaluating countries and denominated in terms of their own (creditor's) currency, interest receipts would remain the same unless there were specific provisions to the contrary. The principal Western European countries, especially Great Britain, were important creditor countries before the war and it is probable that most of their fixed-interest-bearing loans to foreign countries were denominated in terms of their own currencies. Devaluation is therefore likely to increase the foreign exchange deficit of the Western European countries, especially Great Britain, so far as financial transactions are concerned, thus reducing whatever surplus, if any, might result from trade and service transactions.

It is far from certain, therefore, that devaluation would solve the balance-of-payments difficulties of the Western European countries under present circumstances. It is quite possible, in fact, that, for a short while at least, it would make matters worse. If it should, that in itself would usher in new difficulties.

Economists are too prone to analyze the probable long-run effects of a particular change, such as a change in exchange rates, on the basis of the assumption that the adjustment process will not in itself cause a reaction that may influence the long-run solution. But the failure of devaluation to redress the balance-of-payments deficit fairly rapidly (or at least to reduce it) may result in difficulties that reduce the effectiveness of the devaluation policy, even from a long-range point of view.

The first of these difficulties is that if the devaluating country has insufficient foreign exchange reserves, it will not be able to wait until the devaluation works. Either some sort of stabilization loan would have to be secured, or direct controls would have to be reinstated.

The failure to achieve success fairly rapidly, moreover, is likely to make a speculator out of many a trader who anticipates a further devaluation and therefore abstains from purchasing the devaluating country's exports as long as he can. Any widespread speculative move of this sort, of course, will accentuate the difficulties and almost certainly force a further devaluation or a return to direct controls, unless foreign exchange reserves are large, since it means that exports decrease rather than increase, thus reducing foreign exchange receipts. (Rumor of an impending devaluation, though officially denied by the authorities, seems to have been responsible at least in some measure for the current international financial crisis in Great Britain.) Any signs of weakness, furthermore, such as a rise in domestic money wages and prices or a competitive lowering of prices on the part of other countries, is likely to be interpreted by traders as an indication that a further reduction in the exchange rate is in the offing.

For devaluation to be effective in reducing a country's foreign exchange deficit, therefore, it should be undertaken only if the country concerned is in an almost certain position to make it stick. This means that the country must be able to curb the inflationary pressures that are likely to arise: it should have some slack that can be utilized for expanding the production of exports without having to rely entirely on a cut in home-produced consumer goods or domestic investment as a means of acquiring the needed resources, and it should have sufficient foreign exchange reserves to tide it over the initial period. In addition, it is difficult to make a given devaluation stick if it is undertaken at a time when world prices are declining or threatening to decline, since the extent of the devaluation that is needed can hardly be gauged, and competition from other countries may necessitate a succession of exchange rate reductions, as was the case only too frequently in the early 1930's.

Finally, devaluation, accompanied by the domestic economic policies necessary to make it work and by a substantial move towards decontrol, would have the disadvantage of being nonselective. The prices of all imports would rise in terms of domestic currency, whether or not they were essential for increasing the country's ability to produce, for in a free pricing system essentiality is defined only in terms of the prices the purchasers are willing to pay. In those European countries that have been determined to rid themselves of direct controls as rapidly as possible, there has already been far too much waste of scarce foreign exchange on luxury imports and of scarce domestic resources on the production of luxuries. Under present conditions in most of the Western European countries — where profits have been swollen by inflation but where the long-run prospects for private investment are clouded by uncertainty, political and social change, and the constant fear of war — an increase in import prices is likely to discourage the purchase of capital equipment and materials that are badly needed if productive efficiency is to be increased.

Economic Goals

Perhaps the most significant (and too infrequently understood) change that has occurred in recent years, and particularly since the war, is the determination on the part of the masses of the people that their living standards must be improved and that if the existing governments and institutions will not be instrumental in improving them, these governments and institutions must be changed. Better communications, the awareness of wide differences in levels of living among countries, and particularly the experience of the 1930's when resources remained idle in the face of great want, are all factors that have contributed to this widespread attitude. The result has been an insistent demand for increased investment and industrialization as methods of raising the productivity of labor.

Under the conditions of the immediate postwar years, with low productive capacity and large deferred demands, inflationary pressure was almost inevitable. In those countries that were determined to rid themselves of direct controls as rapidly as possible, major reliance for the anti-inflation drive had to be placed on the general, over-all controls of monetary and fiscal restriction, and wage stabilization (as soon as the latter seemed politically feasible).

The result in many of these countries has been a return to "normalcy," at least within recent months, but it is the "normalcy" of the depressed prewar period. Living standards are low, investment plans have in many instances been shelved, and unemployment has again become a fairly serious problem. Under such circumstances it is fallacious to assume that investment has merely been "postponed," that resources will sooner or later be shifted. A cut in the home market through outright deflation or through a rise in prices relative to money incomes is in danger of stopping up essential investment indefinitely.

On the other hand, retention of controls may merely hide or check temporarily the inflationary pressures, but so long as an increase in much-needed investment is achieved in the meanwhile, it is all to the good. Moreover, as production expands, inflationary pressures are likely to dwindle.

A similar situation prevails in the field of international transactions. A country's international accounts can be balanced either by direct controls over imports (and in some instances exports), or by the indirect regulation of relative prices operating either through general price level changes or through exchange rate changes. Unless exports can be increased rapidly, the brunt of the adjustment will have to be achieved by a cut in imports. If there is no direct selection as to which imports are cut, there is grave danger that too much of the cut will come in those imports that are essential, from a longer-range point of view, for increasing the efficiency of production.

The question of selectivity, moreover, is particularly important today as a means of determining from which countries the imports are to come. When complete convertibility of one currency into another was the rule (in other words, under conditions of complete multilateral payments), decisions to expand domestic investment or consumption were often frustrated by the fact that other countries were not undertaking similar steps at the same time. Since an increase in domestic expenditure, in the absence of controls on foreign payments, will lead to an increased demand for foreign exchange, a deficit in international transactions was almost bound to result for the expanding country unless sales to foreigners kept pace through similar expansionary moves in foreign countries.

At the present time, deficits are not so likely to be general, but vary from country to country. With investment rates differing rather widely among the principal countries and with differing export rates needed to pay for prewar import levels, there are varying degrees of scarcity among the major currencies, aside from the world-wide particular scarcity of dollars.

A country that wishes to improve its productivity and living standards through a high rate of long-term investment needs to have the power both to by-pass purchases from those countries whose currencies are scarce because their international purchases (or lending) are low, and to find substitute supplies in other countries whose currencies are relatively abundant. In a time of relative stability, with investment and income expanding at a more or less uniform rate in the principal countries of the world, this was not so difficult a problem to cope with. At present, however, with aimed-for investment rates differing from country to country, and with sharp changes in the supplies of various currencies following relatively sharp changes in income (such as the recent decline in imports into the United States), decontrol and devaluation would increase the deficits of those countries attempting to maintain high investment rates. They would either have to increase their net international borrowings, decrease real consumer expenditure (hence imports), or abandon some of their investment plans; and the second and third alternatives are likely to amount to the same thing, since private investment would become unprofitable and contract when faced with declining consumer expenditures.

The United States and Foreign Investment

The problem of restoring multilateralism to the world can, in a sense, be divided into two parts or areas of attack. One is the question of achieving a multilateral payments system for the countries of Western Europe (and their dependencies) alone; the second involves the United States and the question of the dollar shortage. The first in itself would constitute no small achievement, since this group of countries before the war transacted a large proportion of the world's international trade and since anything that would increase the productivity and living standards of these countries would go a long way towards building up the kind of world we want to live in. Some agreement as to domestic investment rates and policies, which have been an important stumbling block to convertibility in the past two years, may be possible as productive facilities continue to expand, along with living standards, in the next few years. Moreover, inclusion of the colonies and dominions of the principal Western European powers in such a multilateral system would mean that a large part of the world would be able to enjoy the advantages of international specialization and the maximization of real income from trade.

However, even if Western Europe were able to achieve some form of regional multilateralism in the next few years, it seems very doubtful that the international transactions of the group with the United States can be brought into balance without direct controls, in the absence of continued dollar loans or aid. In fact, the continued attempt to include convertibility into dollars, even if only on a limited basis, may defeat the attainment of even a regional multilateral system.

The scarcity of dollars in international transactions is the result of a number of factors: the superior efficiency of United States production; our vast markets and consequent ability to use mass-production techniques; our superiority not only in manufacturing and other lines of industrial production but in agricultural production as well; the inability of the Western European countries to find substitute supplies (as yet) in other countries for the products now imported from the United States; and our rapidly increasing productivity, which in the past has had the effect of leaving most other countries far behind us even when they were making rapid strides to keep up with us. If it be argued that there was little evidence of a world dollar shortage in the decades between the wars, it must be pointed out that in the 1920's the United States made substantial private investments in foreign countries, and that in the 1930's the shortage was prevented from materializing, so to speak, by low production and income levels the world over and by the growth of direct controls.

There is very little likelihood, moreover, that the dollar shortage will be eased significantly in the next few years as a result of increased production in the Western European countries. Increased production will necessitate the continuation of a high level of domestic investment which will take time to bear fruit; meanwhile the demand for imports from the United States will remain high.

For Western Europe to be able to balance its international transactions without direct controls and without continuous aid from us, exports from Europe will have to be larger than prewar in order to pay for even the prewar level of imports. European imports before the war, however, were limited by low income and employment levels, and it is probable that the ratio of import prices to export prices will be higher than it was before the war, because of control and price-support schemes in the major primary production countries which increase the real cost of those imports.

Taking all of these factors into consideration, it is evident that Europe may find it difficult to sell enough abroad to pay her way currently. Even if she should be successful in wresting away some foreign markets from us (in Canada, the Far East, Latin America), she is not likely to be able to obtain in those markets sufficient substitutes for the goods and services she is currently purchasing from us.

Ruling out the possibility of world-wide deflation and reduced output that would decrease the foreign demand for United States goods and services, there are only two ways in which the dollar shortage could be alleviated. One is for the United States to increase purchases from foreign countries. Though there are possibilities along this line from a long-range point of view, it is very unlikely that our imports will increase substantially in the next few years. Some Western European countries could presumably do more than they have been doing in the way of pushing their products in the American market, and American tourist expenditures abroad are likely to supply an increasing amount of dollars to foreign countries. In view of the alarm expressed in many United States quarters, however, at the "flood" of imports that may threaten some specific enterprise now that we have returned to a more competitive market, it may be all we can do to stem the tide towards increased protection.

The second way in which the dollar shortage could be alleviated is through private United States investments in foreign countries. Herein lies the significance of the President's Point Four program: that it would not only increase production and living standards in the backward countries of the world, but would provide markets, and indirectly a dollar supply, for the Western European countries. Compared with direct loans or gifts to Europe, such a foreign investment program would have the advantage of compelling the European countries to compete for markets on a price basis and of thus securing the increases in productivity that are likely to occur only under competitive conditions.

That the United States is in a position to be able to "afford" such investments, there can be little doubt. Our loans to Europe have been one of the important factors contributing to the high level of income and employment we have maintained in the postwar period, and the need for such outlets for our high savings is likely to grow stronger.

Whether private American capital will be forthcoming to undertake the investments, however, is another matter. Foreign investment at present is subject to a considerable amount of risk due to a variety of socio-political controls that have been instituted increasingly by the unindustrialized countries, as well as to the risks involved in transferring earnings (and, even more so, the capital itself) from the foreign currency into dollars, especially if the dollar remains relatively scarce in the foreign exchange markets.

To overcome the understandable reluctance of Americans to invest in foreign countries, some agreements will have to be reached with the foreign countries concerned as to their treatment of American corporations doing business there. The question of guaranteeing the convertibility of earnings and capital presents a more difficult problem. Should the world dollar shortage continue, the guarantee provisions would necessitate, in effect, the making of international loans by the United States, since we would presumably then hold non-convertible balances in the foreign countries.

More serious, in a way, is the question of whether or not the investment programs needed in most of the backward countries are of a nature that lends itself to private development. The development of power and transportation facilities, and the training of a labor force, are crucial requirements for almost any industrialization (or even the modernization of primary production) other than the mere extraction of natural resources of the type already undertaken by American investors. Foreign investors, moreover, are generally willing to provide only the minimum of foreign exchange (in this case dollars) needed to purchase capital equipment and supplies and to pay managerial salaries. The International Bank likewise grants loans to cover only those costs that must be met in foreign currencies. The domestic outlays, such as home-produced building materials and on-site expenditures, which usually constitute a large part of any investment project, must be met out of domestic savings. But any investment project tends to cause an indirect foreign exchange drain. It usually reduces the domestic production of consumer goods or exports, and at the very least causes an increase in income, with the effect of increasing the demand for imports relative to the supply of exports. For all of these reasons, many foreign countries have not been at all anxious to secure private foreign investments.

The development of a foreign investment program, if it were sustained and did not fluctuate as did the private foreign investments of the late 1920's, would go far towards raising income levels in the backward countries, thereby helping them and also helping ourselves by increasing our markets in years to come. It would also go far towards alleviating the problems faced by the Western European countries, enabling them to move towards an effective multilateral system. Without such a program, and without continuing aid to the Western European countries, foreign purchases in the United States will necessarily have to be cut down to the availability of dollars through our imports of goods and our payments for services. To the rest of the world, this would increase immeasurably the problems involved in raising their productive ability and hence their living standards, and their curtailment of imports from us would have to be secured by either the retention of direct controls or the adoption of strongly deflationary policies that would impoverish them sufficiently to reduce their purchases from us. To the United States, it would mean decreased exports, hence decreased output and employment, unless we were successful in securing additional investment outlets at home. Of the two, the foreign investment program would certainly be better for the rest of the world, and even from the narrowest self-interest point of view, might well be cheaper for us.

Indonesia and the Truman Fourth Point

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IN JANUARY, 1949, President Harry S Truman, in stating his now famous "Fourth Point," ushered in a program by which the United States was pledged to help underdeveloped areas of the world. One such area would be Indonesia, the islands making up the Netherlands East Indies. There is nothing new in Truman's "Fourth Point," as it has its precedents in United States government lending agencies, such as the Commodity Credit Corporation and the Export-Import Bank, in the European Recovery Program, and in international agencies such as the United Nations.

For over three hundred years the Dutch East Indies have been under the rule of the Netherlands government. Politically, Indonesia is part of the Kingdom of the Netherlands. Theoretically, the natives govern themselves, subject to the final authority of the Governor-General, the Crown's representative. Dutch interest in political control over the islands is realized when it is known that this area represents one-sixth of Holland's national wealth, and an investment of some $1.5 billion. The Netherlands' contribution to the economic well-being of the archipelago can hardly be overlooked; but for everything it has given to the islands it has also taken something out. Before the war the islands accounted for 9 percent of the Netherlands national income and helped to equalize the latter's balance of payments.

In the twentieth century the Indonesians themselves awakened to the idea of their existence as a national and economic entity. The natives in the last few years have seen their islands occupied and devastated by the Japanese and racked by civil war. It was during this period that the Nationalist group under the leadership of Dr. Soekarno and M. Hatta gathered force and strength. As the Japanese were evacuating the islands, and before the British occupation forces could move in to restore Dutch colonial rule, this nationalistic group seized power in Java, Sumatra, and Madura, and proclaimed the existence on August 17, 1945, of the Republic of Indonesia. The Dutch government agreed to come to terms with the Republic, signing the Agreement of Linggadjati. However, the Agreement failed to maintain peace, and after renewed fighting the Dutch obtained the advantage. The United Nations entered into the dispute and through its Security Council has tried to find a solution to the problem of who is to govern the islands, and of Indonesia's status in the Kingdom of the Netherlands.

While the Republic and the Dutch government of Indonesia have been waging war, both contenders have recognized that the great need for the island kingdom is economic rehabilitation and development. American help is needed and will be welcomed. However, experience creates suspicion;

and both parties want to have this help without reservations, for the advantage of their people, and not to enrich, or put them under the control of, the American investor.

The islands have already received some American aid, and have asked for additional help. This precedent gives greater meaning to the Truman "Fourth Point." Under the operations of the Marshall Plan during its first year, the country was granted $84 million to be used for machinery, tractors, and building materials for increased agricultural production. For a time, because of the civil war, payment on this sum was temporarily suspended, but payments have since been resumed, so that through May 18, 1949, $61,839,000 had been spent. When the Indonesian government question is solved, the Export-Import Bank will probably renew its $100,000,000 credit for reconstruction purposes. A credit is being sought from the Bank for the rehabilitation of palm oil and rubber estates, and a further credit of $25 million is asked for fisheries. The Commodity Credit Corporation will probably advance credit for "incentive goods." A credit of $25 million is being asked for the purchase of "incentive goods" for copra growers.

At present, there are twenty-six American firms in Indonesia. The largest American factories are Goodyear Tire and Rubber, United States Rubber, Standard Oil of California, Texas Company, Standard Vacuum Oil Company, Procter and Gamble, and General Motors Corporation. The operations of these companies have been moderately profitable besides helping to increase the islands' national income.

Since the Truman "Fourth Point" has been placed by the United States government before the United Nations, it is worth noting that the United Nations Economic and Social Council's committee, the Economic Commission for Asia and the Far East, has roughly estimated the total financial requirements of the Dutch East Indies at approximately $1,045 million dollars.

The distribution of the $1,045 million would be as follows:

Transportation and communications	$97,266,000
Electrical power development	87,464,000
Irrigation projects and fertilizers	27,897,000
Chemicals	9,689,000
Iron and steel	4,147,000
Nonferrous metals	33,930,000
Manufacturing industry	784,952,000

This sum is conservative, as the Indonesians could use a great deal more money to further their development projects. Then, too, it includes the development of only a part of Indonesian natural resources and not any of the more essential items needed to improve the Indonesian standard of living, such as the development of human resources. Yet one is concomitant with the other, and each is dependent upon the other.

The Republican leaders, the Dutch government of Indonesia, and the United Nations have drawn up plans for reconstruction and development of the Netherlands East Indies. These plans will be set forth in order to show where aid and help would be applied if the Truman "Fourth Point" should become a reality. Any sums of money shown in connection with the various plans are not necessarily those previously mentioned.

Economic and Social Problems

Perhaps the main difficulty Indonesia faces centers around her population of seventy million. The total land area on which this population is living is equal to the combined land areas of the states of California, Arizona, New Mexico, Texas, Louisiana, and Mississippi, or 733,790 square miles. The country's density of population is 95.4 per square mile, whereas the United States, with its forty-eight states, has a density of population of only 43.6 per square mile. India's density of 246.5 per square mile and China's 137.1 surpass what many people believe to be Indonesia's claim to the greatest mass population per square mile per total land area. However, Java is the most densely populated land mass in the world, with 826 persons to the square mile.

A great number of the Indonesian people have neither the means nor the way to earn a living, nor do they have enough food. There is a great deal of emphasis placed upon improving the health and sanitary conditions existing on the islands. Even if those conditions are improved, so long as the people still have not the means or way to earn a living and cannot obtain food, the only difference health and sanitary improvements are going to make is to change the nature and cause of death from a group of endemic diseases to starvation.

Nevertheless, health and sanitary conditions have to be improved. Doctors are needed in Indonesia, as in 1947 it had only 320 physicians and 1,500 professional nurses. These figures for the number of doctors in Indonesia hardly compare with those for the United States. In 1948 there were 198,000 doctors in the entire United States. In the Dutch East Indies, general hospitals are inadequate, but there is a much greater need for special hospitals, and for clinics — medical and dental. Mass inoculations will have to be continued, free medicine distributed, DDT spread over the islands, and mass campaigns undertaken to get rid of and prevent diseases.

To take care of the concentration of people on a few islands, many of them will have to be encouraged under government auspices to emigrate to other parts of the country, where they may earn a living and obtain the necessary food, clothing, and shelter. Emigration would also alleviate health hazards.

In Indonesia 89 percent of the total population is illiterate. Schools of all kinds, teachers of all subjects, equipment, and school buildings are needed. A large number of highly trained workmen and technicians are needed if Indonesia is to be industrialized. The Truman Plan recognizes the need for mass education if a nation is to develop and to raise its standard of living.

Natural Resources

Indonesia has natural resources, the greater part of which are undeveloped. In furthering the country's agricultural and manufacturing industry, its electrical power system will play an important role. In 1947 there were 144 public utilities with a total installed capacity of 180,000 kw. and 170 private utilities with a loading capacity of 160,-

000 kw. About 60 percent of the public utilities are hydroelectrical plants.

All the islands have possibilities of being developed electrically, but Java is the one which could most easily be electrified, as it has an abundant water supply. The island has a hydroelectrical potential of about 750,000 kw., of which only 12 percent is developed. The Netherlands government in the Dutch East Indies has a five-year electrical development program to increase the electrical power capacity of the islands by 1953 to 590,400 kw.

Another valuable natural resource is in forests. The forests of the archipelago perform varied services, such as providing timber supplies needed for essential construction in the islands and for the countries surrounding them. The forests are also needed to help in the prevention of floods and erosion and to aid in providing an adequate water supply. On account of the wilful destruction of the forests during the Japanese occupation, it will probably take several years to bring the forest area back into fruitful production. Timber exports could be increased to four times their prewar quantity if proper conservation and cutting methods were adopted and carried out. The government is hoping to reach that goal soon. Several plans have been projected to set up industries that have the tree as their raw material supply. For example, a combined cellulose, sawmill, and plywood industry is contemplated for South Borneo.

Minerals of all kinds for the economic development of the islands are found in nearly every area of Indonesia. Of the more important minerals, for example, there is oil on the islands of Sumatra, Java, Borneo, and the Moluccas; coal on Sumatra and Borneo; and tin on Banka and Billiton. Huge iron ore deposits are found on the islands, but they have not as yet been developed on account of the impossibility of coking Indonesian coal, and the iron ore may have to be developed by the use of the processes involved in electrometallurgy.

Before the war, the island kingdom accounted for 3 percent of the world's crude oil supply, developed by the Shell group and the American company, Standard Vacuum. The islands were self-sufficient in coal production, producing about 1.75 million tons of bituminous coal a year. By 1953, Indonesia hopes to have a coal output of two million tons annually. In 1948 (first 9 months) the islands accounted for 19.6 percent of the world's tin production.

Mineral development has been greatly retarded by the war. Equipment and mining engineers are needed. New fields of mineral wealth could be found if the necessary exploratory equipment were made available. In the Dutch East Indies, theoretically, all mineral wealth belongs to the community, and the government (the Governor-General) grants the right to develop and exploit the mineral wealth. A concession can be obtained for a period of 75 years over a maximum land area of 4,000 acres. The government, in return for the concession, receives a small annual fixed rental and 4 percent of the local value of the products mined.

Agriculture

Indonesia, like most underdeveloped areas, is an agricultural country. According to the 1930 census, 60 percent of all Indonesians were making their living by farming, but a United Nations report states that the number is now as high as 80-90 percent. Prior to the second World War, the archipelago was not only self-sufficient in agriculture, but it also produced the greater part of the raw materials used in its industries. Then, too, 25 percent of the Dutch East Indies' total exports were agricultural products.

With the increase in population, the food supply has necessarily been reduced for the total population, just as the available amount of land used for cultivation has been reduced per farmer. It is said that the average farmer has about 0.8 acres to farm. About three-fourths of the total agricultural land area is devoted to the growing of food crops. Food production is 20 percent below prewar volume. Because of Indonesia's inability to supply her people with sufficient food, she has to import and spend what little foreign exchange she has just to keep her people alive. Supplies of rice, wheat, vegetables, sugar, and other products have to be imported.

Rice is the principal food of Indonesia. Since the war the rice areas have been steadily brought back into cultivation and the rice yield has steadily improved. By 1947-48, 8.8 million acres were under rice cultivation. It is hoped to increase the acreage to 11.3 million acres by 1950-51, with a production yield of 4.61 million tons.

Commercial crops grown by estates and native holdings are important to the Indonesian economy. By the exportation of commercial crops, foreign exchange is provided. The plantations are usually in the hands of foreigners who, although they cannot own or buy the land, may rent it on long-term leases under government supervision.

The Netherlands East Indies produce more than 70 percent of the world's supply of cinchona bark, pepper, and kapok. They account for 37 percent of the available raw rubber, and from 11 percent to 33 percent of the world's total output of agave, copra, palm oil, tea, and sugar.

The output of natural rubber is dependent upon American purchases. Export regulations require that if an exporter wants a license to ship raw rubber out of Indonesia he must sign a contract stating that 50 percent of the supply is being sent to the United States. In the Dutch East Indies there are twenty-nine rubber-products factories — one, an American branch factory — with a total investment of a little over $4,000,000. The Indonesian rubber industry requires about $223 million for reconstruction and development purposes.

Irrigation. The irrigation of agricultural lands is important if crops are to be supplied for the subsistence of the Indonesian people, or for additional exports, in order to obtain foreign exchange. Java and Madura, on account of their dense population, have more need for an irrigation system than the other islands. On some of the islands — Bali, Sumatra, and South Celebes — irrigation projects are in progress. There are plans for bringing 820,000 acres under irrigation in Java, Madura, Sumatra, and Borneo. The greater number of the irrigation projects will come into operation in 1951.

Fertilizers. The soil of Indonesia is in need of plant nutrients, particularly nitrogen, phosphorus, and potash. For soils on which sugar cane is grown, ammonium sulphate and ammonium phosphate are needed. According to a United Nations report, about 35,000 tons of ammonium sulphate and 1,000 tons of ammonium phosphate were needed in 1948. A tentative plan is under advisement to build a fertilizer plant having a capacity of 25,000 tons of ammonium sulphate per year. Operations should be resumed on the Cheribon phosphate mine, which before the war produced 20,000 tons of ground phosphate rock a year.

Since the supply of fertilizers is limited, the government has encouraged the extensive use of the practice of green-manuring and cover-cropping with legumes. This treatment builds up soil fertility, prevents erosion, and helps to reduce flood hazard.

Livestock and the mechanization of agriculture. In the Dutch East Indies livestock are primarily used for tractive purposes, with meat production secondary, and milk production of minor importance. The value of the livestock industry prior to the war was placed at $200 million. Java and Madura accounted for two-thirds of this sum.

After the war, measures were instituted to try to bring about an improvement in the livestock industry. The spread of infectious diseases has been decreased to a certain extent as a result of the work of the laboratory at Makassar, and attention has been paid to the breeding of livestock. Provisions have been made for the expansion of the dairy industry, through the establishment of cooperative plants for dairy produce, and also for the expansion of poultry farming.

Before the war, agriculture was scarcely mechanized, and though the tendency has been to continue to use animals for tractive purposes, the problem has been one of getting the necessary food for them. Plans on a very modest scale have been presented for mechanization. Tractors, ploughs, harrows, and hand tools are greatly needed. Government programs for peanut development in Celebes and a pasture development in New Guinea require equipment, as will estate and non-estate agricultural holdings. All the supplies will have to be imported, and in addition, one thousand tons of steel are needed annually from abroad for local manufacture of hand implements.

Manufacturing

Until the world depression of the 1930's manufacturing had made virtually no progress in Indonesia. The Netherlands East Indies government, as a result of a lag in the export trade, undertook a program to encourage manufacturing. Manufactured goods were exhibited throughout the rural areas; people were employed to teach the natives the uses of these articles; competitions and fairs were held; and cooperatives or centrals were established.

Three classes of manufacturing—cottage, small-scale, and factory—came into existence. Workers engaged in cottage industry were the farmers who, by that method, supplemented their family income. Sometimes cottage industry was combined with small-scale industry, or with factory industry. Small-scale industry was carried on in workshops where less than fifty people were employed, using primarily hand tools. Factory industry, in which each plant employed more than fifty workers, utilized mechanical tools. However, there were few of these large-scale factories.

In 1940, 2.5 million natives were employed in primitive manufacturing and 0.3 million in industries using western methods of manufacturing. Indonesia has a wide range of small-scale businesses engaged in the processing of food products, and in making wearing apparel, chemical and metallurgical products, glass, and transportation equipment. It is believed that with foreign assistance the number of these factories could be greatly increased.

The textile industry is one of the largest in the island kingdom. In 1940, the industry produced 120 million yards of woven textiles, which satisfied one-seventh of native requirements. Part of the spinning and weaving of cloth is done through cottage industry. It is proposed to increase spinning capacity in the period 1949-53 to 120,000 spindles, from an estimated 2,200 in 1947, which would increase the output of yarn to 30 million pounds. The number of looms would also be augmented to effect a cloth output of 250 million meters per year. The present number of employees in the textile industry is about 14,000; by 1953, if spinning and weaving capacity has been increased to the extent proposed, the number employed will be 100,000. An investment of $40,000,000 will be needed, of which $32,500,000 will have to be represented by foreign exchange.

The textile development plans also include setting up a hosiery factory and a jute-bag manufacturing plant, requiring an estimated $12,000,000, of which $10,000,000 will have to be in foreign exchange. Plans call for the completion of the hosiery factory in two to three years and the jute-bag plant in four to five years. The estimated annual production for the hosiery factory will be about 2.5 million dozen stockings, and that of the jute-bag plant, 20 million bags.

Indonesian industry is at present primitive, small-scale, and a consumers' goods industry manufacturing primarily for local consumption. However, there are in the archipelago natural resources and materials that could transform Indonesian manufacturing into a highly mechanized, large-scale industry, and a combination of a consumers' goods industry with a producers' goods industry. The islands are centrally located and could become a center of manufacturing for the whole Southeast Asiatic area.

Labor. Americans coming into the islands will find an abundant labor supply, and will perhaps be surprised to find that the workers have unionized. In 1935 there were 111 trade unions with 72,675 workers. In 1939, there were 75 with 109,547 workers. This represents a concentration in trade union development with fewer unions and more workers unionized. In November, 1946, the Central Indonesian Labor Organization was formed in

Djokjakarta for all unions in Republican territory, mainly in Java and Sumatra. This union is an industrial union composed of twenty-eight industrial and craft unions and has a membership of about 1,200,000.

There are no general provisions regulating the employment of labor, but there are special laws on the statute books. These laws are not adequately enforced and, therefore, have little effect on the relations between employer and employee. In Indonesian industry, before the war, the working day ranged from 7½ to 11 hours, and the daily wage, from 0.04 to 0.85 guilders. Using fifty cents as equivalent to one guilder, this would mean that the lowest wage paid was 2 cents a day and the highest, 42.5 cents. Women were paid somewhat less than men for the same number of hours.

Absenteeism among Indonesian workers is greatly exaggerated. In one of the first spinning mills established in Java in 1937, absenteeism, exclusive of sickness or accident, was only three percent in 1940. Labor costs are lower, and though a native may not produce as much as an American worker in the same period of time, the quality of the work is good. General Motors Corporation, the oldest of the foreign industrial concerns in the Indies, has Javanese working for it. The natives need more hours than Americans to do a given piece of work; still the corporation has found that the quality of product is nearly as high. The Goodyear factory has reported similar results.

Transportation and Communication

The industrialization of any country is dependent upon the transportation and communication facilities within it. Goods and passengers must be carried by land, air, or sea, and people must be kept in touch with the various parts of the islands and with the outside world.

Before the war, 16 percent of all goods was carried on the roads. On January 1, 1938, there were about 65,000 km. of roads. Java and Sumatra alone had about one-half of the road mileage. All roads are in need of repair, and during the next five years an estimated expenditure of $19,000,000 will be needed. This sum does not include new road construction. Private cars, jeeps, trucks, and buses are few in number. In October, 1945, there were only 1,350 trucks and 1,180 jeeps and private cars in Indonesia. Expectations are that by 1953 there will be 16,000 trucks.

Prior to World War II, there were 4,550 miles of railroad operated by thirteen private lines and one state line. With the exception of 140 miles, these lines were located entirely in Java and Sumatra. Two-thirds of all Indonesian products were carried by the railroads before the war. On March 1, 1948, a large proportion of the Madura lines were in operation, as were 1,312 miles of lines on Java, and 487 miles on Sumatra. Since the war, all the railroads with the exception of the Deli Company have been taken over by the government. The private lines are being reimbursed by an annual lump sum. The war greatly reduced the rolling stock, so that on March 1, 1948, the state owned 366 steam locomotives, 1,187 passenger coaches, and 12,138 freight cars. The railroad gauge was standardized by the Japanese to 3′6″, and so there is little difficulty in transferring trains from one line to another. This is, however, about a fourth less than the standard gauge in the United States and in many foreign countries.

Several plans are contemplated for the purchase of new equipment, depending upon the amount of foreign credit available to the Netherlands Indies. These plans call for purchasing rolling stock of all kinds, steel for both bridges and tracks, signaling equipment, and general material for restocking railway warehouses. A great number of these purchases could come from the United States.

Water traffic is divided into minor coastal navigation, main interinsular, and the ocean. The Royal Packet Navigation Company (K.P.M.) has ships upon all Indonesian waters. In addition to the ships of K.P.M., thousands of small sailing vessels are engaged in minor coastal navigation and ships of oil transportation companies and a few other concerns ply the main interinsular water routes. Ocean commerce is also carried on by four other shipping concerns — Maatschappij Nederland, Rotterdamsche Lloyd, the Ocean Steamship Company, and the Java-China-Japan Line.

There is a shipbuilding industry in Indonesia equipped to build lighters, small dredges, and small interisland and coastal craft. This trade, too, could be greatly extended if the necessary capital could be found.

In 1941, 10,000 km. of airways existed on the island kingdom, but the mileage has since been doubled with K.L.M. (Royal Eastern Airlines) playing an important part. Since that time there has been a decided increase in the number of passengers and the amount of mail and freight carried.

The more important sections of the country are connected by a communications system — by postal, telegraph, and telephone services. However, the communications system has suffered as a result of the war. It is believed that reconstruction activities will take from five to ten years, at a cost of about $20 million.

Dutch and Republican Programs of Reconstruction and Development

Both the Dutch government of Indonesia and the Republican leaders have promised to raise the standard of living of the Indonesians. In many respects, their plans and the manner in which they propose to do this are similar.

The Dutch government in Indonesia has promised to make its welfare activities permanent and on a much larger scale. The government has promised to continue its emigration scheme to transport people to other less crowded parts of Indonesia, to pay the expenses of transportation, and to help the people get started on their new way of life. The Republican leaders have made the same promise but only to transport many more people and to help these people on a much larger scale. Both sides agree on the necessity of expanding the educational facilities and of eventually making them available to the masses. They see the continuation of a health and sanitation program. An increased food supply has been promised by making more land available for food crops, by increased use of fertilizers and irrigation, and by the mechanization of agriculture.

Manufacturing must be promoted if the Indonesian is to raise his standard of living. However, manufacturing must be supplemental to agricultural production, as both the Republican leaders and the Dutch government in Indonesia recognize the fact that the country is primarily agricultural. Both sides agree on the need of legislation and enforcement of minimum wage and maximum hours for workers, as well as in regard to the protection of women and children in industry.

The Republican leaders and the government of the Dutch in Indonesia hope to continue and expand cooperatives or central organizations, for both peasants and laborers, to help small industries get started by lending them the necessary capital, as well as to lend money to the farmers for their agricultural pursuits. They realize that Indonesia must be electrified if agriculture and manufacturing are to progress. They also recognize the fact that the minerals of Indonesia must be developed and exploited on a much wider scale than heretofore.

Both the Republican leaders and the Dutch government have agreed to undertake a public works program. The Republican leaders believe in a long-run economic program of nationalization, first nationalizing those industries which perform a public service, as gas, water, electric works, and transportation and communication facilities.

Both sides emphasize the need to regulate the import-export trade and to control foreign exchange, in order that the exchange obtained from exports can be used to obtain the imports most needed in the Indonesian economy.

International Trade and Balance of Payments

Before the war, Indonesian trade was characterized by a metropolitan-colonial relationship. Her so-called favorable balance fluctuated according to the relative prices of import and export articles. In 1937, her exports were valued at 528,000,000 United States dollars. This sum represented 3.45 percent of the total world export trade and 37.59 percent of the total export trade of Southeast Asia. In the year, her imports were valued at $277,000,000, representing 1.7 percent of total world trade and 30.64 percent of the import trade of Southeast Asia. Thus, Indonesia's so-called favorable balance of trade was $251,000,000. In 1948 (first 11 months) Indonesian exports were valued at only $361,036,000 and her imports at $372,829,400. The Dutch East Indies' so-called unfavorable balance of trade of $11,793,400 is ascribed to conditions resulting from World War II and her own civil war.

In 1938, of the foreign countries sharing in the import trade of the archipelago, the United States shipped goods that were third in Indonesian import value, preceded only by Holland (first) and Japan (second). Before the war, Japan and Germany together supplied over 25 percent of the country's import commodities. Now these two countries are no longer factors in Indonesian trade.

The Indonesian balance of payments for 1939 shows that the country is an undeveloped country dependent for its development on capital-supplying countries such as the United States, England, and the mother country, the Netherlands. In 1939, the Dutch East Indies paid interest and dividends of 201 million guilders while exporting merchandise worth 776 million guilders.

At the time of the Japanese invasion of the island kingdom, America had about $250,000,000 invested in the country. The British had about $50 million more than the Americans. France and Belgium had about $120 million, and the Axis partners each had some $20 million invested in the country. The Netherlands had an investment about four times as large as the combined investments of all the aforementioned countries.

The Bid for Foreign Capital

The Republican leaders and the Dutch government in Indonesia recognize the need for foreign capital if they are to embark upon the extensive programs mentioned above. In January (1949) the Netherlands Minister-without-portfolio, in an interview with a correspondent of the London *Financial Times,* stated that as the Netherlands could not supply all the investment necessary to undertake the rehabilitation and development of the islands, foreign — especially American — capital would be welcomed. He stated that Americans would be promised an "open-door policy without discrimination."

The Republican leaders have promised that foreign properties and capital existing before the war will be returned to their rightful owners, and that their government will take up the prewar foreign contractual debt of the Netherlands East Indies government. They have promised that if foreigners invest in the Netherlands East Indies there will be a minimum of government intervention and regulation of industry, and they promise "a sufficient high return" on each investment. They have also promised there will be no commercial monopolies.

About a year and a half ago, Matthew Fox, former vice-president of Universal Pictures Company, formed with the consent of the Republic the American-Indonesia Corporation (a Delaware corporation) to promote trade between the Republic and private United States firms. In return, Fox is to receive five percent on every ton of material bought or sold by the Republic.

The Republican leaders have stated that Fox's concern is not to be considered a monopoly. Badly needed goods have to be purchased at any price, and since financial resources are so limited, sources of foreign capital are particularly desired. As rehabilitation and development progress, there is a strong likelihood that exports can again be expanded to the point of amortizing and paying a good return on such investments.

Postwar Meat Prices

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AFTER THE WAR and the removal of price controls, retail meat prices rose to the highest levels in our history. This was partly the result of inflation — the cheapening of the value of the dollar by the wartime fiscal and monetary policy of credit inflation. It was also partly the result of high postwar levels of employment and production which meant high incomes for consumers even when measured in dollars of prewar purchasing power. The high prices prevailed in spite of unusually large supplies of meat per person in both 1947 and 1948.

After allowing for the reduced value of the dollar, the high "real" income of consumers, and the large supplies, meat prices were still abnormally high in 1947 and 1948 — abnormally high, that is, relative to the prewar relationships between these demand and supply factors. The reasons are presumably to be found in certain causes associated with the war and the dynamics of inflation. It seems quite likely that it may be another year or so before retail meat prices resume their prewar relationships to available supplies and disposable consumer incomes. It is even possible that part of the increased demand for meat per capita relative to consumer incomes may continue for years.

Some Price Comparisons

In 1898 the retail price of round steak averaged 12.7 cents per pound. Last year it was 90.5 cents. These are the United States average prices as reported by the Bureau of Labor Statistics. The sevenfold increase may seem startling even though a typical bricklayer can buy more steak with a day's wages now than could his predecessor of fifty years ago.

There has been a similar increase in the price of beef cattle. In 1898 "good to choice" steers at Chicago averaged $4.88 per hundred pounds, whereas in 1948 the average of the prices of good steers and choice steers was $33.10.

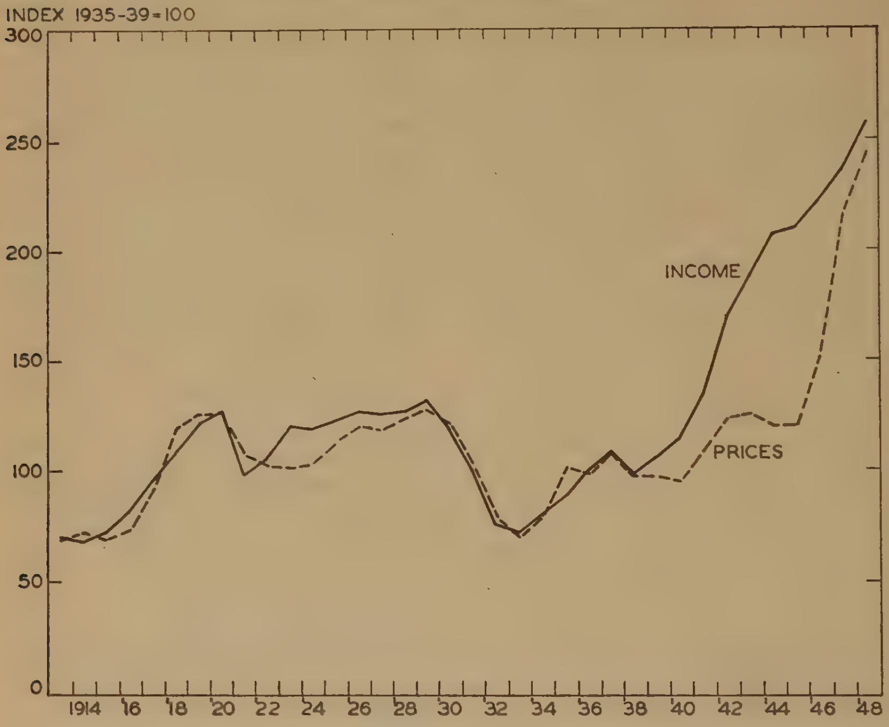
But we do not have to go back 50 years to find that meat prices have risen greatly. The Bureau of Labor Statistics index (1935-39 = 100) of retail meat prices in 1948 was 244, indicating that prices were nearly 2½ times as high as in the prewar base period — in spite of the fact that per capita consumption was materially greater in 1948 than in the base period. The increase in meat prices has been considerably greater than that of foods generally or of the "cost of living" generally. The retail food price index last year was 210 and the consumers' price ("cost of living") index 171, as compared with 244 for retail meat prices.

Causes of High Prices

Of course, the dollar is worth less than it was in 1898. Money and credit inflation has resulted in higher prices for all sorts of things. This explains part, but not all, of the increase in steak and cattle prices. Wholesale prices generally in 1948 were only 3.4

CHART 1

INDEXES OF RETAIL MEAT PRICES AND PER CAPITA DISPOSABLE INCOME



Source: Computed from Department of Commerce income and population data, and BLS price data.

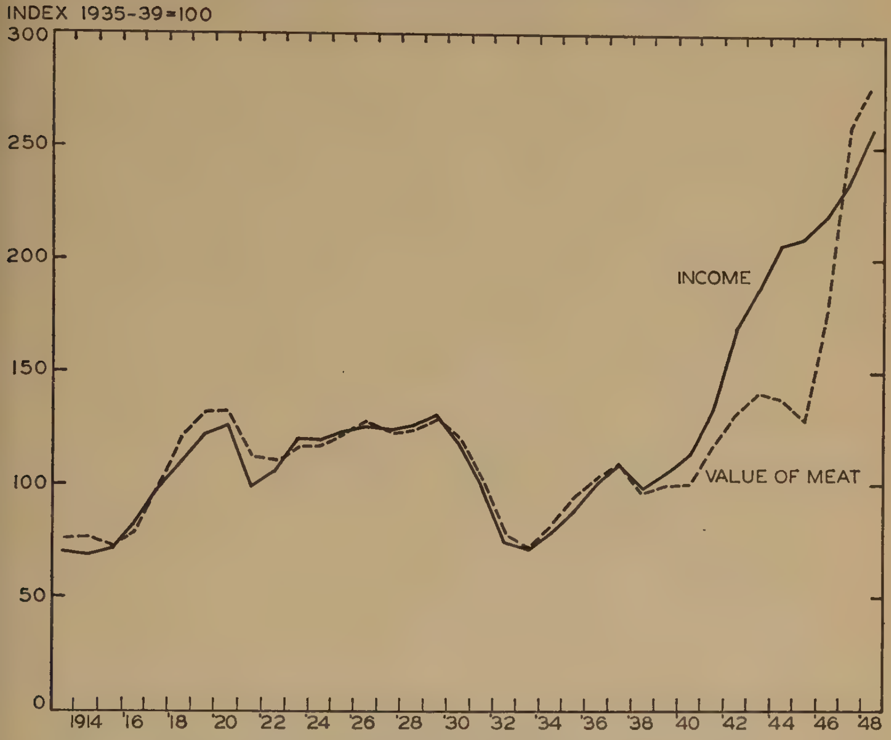
times, retail food prices 3.9 times, and the cost of living 3.2 times as high as in 1898.

Perhaps it should be explained that not all meats increased in price as much as did round steak. Furthermore, since retail prices of only a very few cuts of meats were collected on a country-wide basis as early as 1898, no adequate index of retail meat prices can be computed for that year. However, the reported average price of bacon in 1948 was 5.9 times and that of lard 3.3 times as high as in 1898. Since 1913 sufficient data are available for a fairly satisfactory index of retail meat prices. This indicates that 1948 prices averaged nearly four times as high as those of 1913.

Over the years meat prices have fluctuated rather closely with changes in per capita disposable income. Index numbers of the two series since 1913 are shown in Chart 1. Through most of the period the two indexes are close together. There was, of course, a large discrepancy between them during and immediately following the war. Price

Chart 2

INDEXES OF CIVILIAN MEAT CONSUMPTION AND PER CAPITA DISPOSABLE INCOME



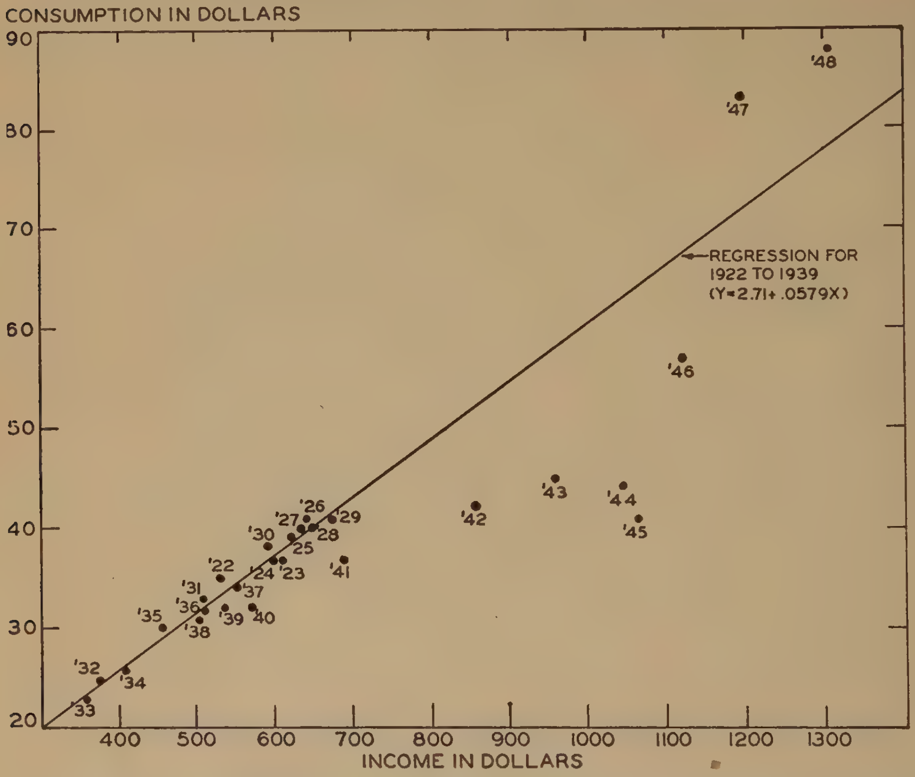
Source: Computed from Department of Commerce income data, and an unpublished Department of Agriculture study of the demand for meat.

control and rationing held meat prices much below the levels which would otherwise have prevailed. Furthermore, the *reported* prices during the price control period were probably more influenced by price control than were the actual prices paid. It is the reported prices which are the basis for the Bureau of Labor Statistics retail meat price index shown.

Inasmuch as the per capita disposable income index was higher than the meat price index in both 1947 and 1948, Chart 1 does not suggest that meat prices were abnormally high in those years. However, meat supplies must also be considered. Per capita supplies — and consumption — were much larger in 1947 and 1948 than in the years 1935 to 1939. A simple though rather rough way of taking account of varying supplies is to compare the total value of meat with disposable income. This is shown (on a per capita basis) in Chart 2. It will be seen that prior to the war the two series moved very closely together — more closely than did the price and in-

Chart 3

RELATION OF MEAT CONSUMPTION TO DISPOSABLE INCOME



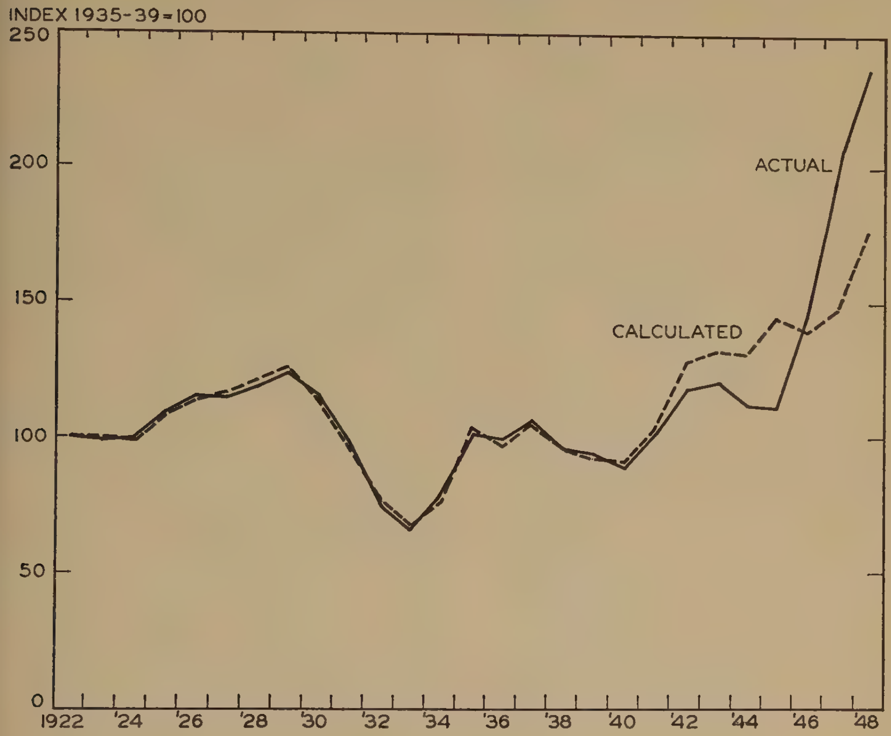
Source: Computed from Department of Commerce income data, and an unpublished Department of Agriculture study of the demand for meat.

come series. Although large supplies tend to depress prices — as for example in 1923 and 1924 — the effect of the lower prices upon total value is largely offset by the increased volume. During the war the index of the retail value of the meat consumed was much lower than the index of disposable income. After price controls were lifted in 1946, the meat value index promptly rose above the income index, suggesting that the demand for meat had increased even more than disposable income.

Still better evidence that the retail value of meat, and retail prices, were abnormally high relative to income in 1947 and 1948 is afforded by a scatter diagram or correlation chart of the per capita value of meat and per capita disposable income (Chart 3). The line represents the average relationship of value and income for the years 1922 to 1939. If this relationship had held in 1948, the per capita retail value of meat consumed would have been 78 dollars instead of 88 dollars. The Bureau of Labor Statistics retail meat

Chart 4

ACTUAL AND ESTIMATED INDEX OF RETAIL MEAT PRICES, 1922 TO 1948



Source: Computed from Department of Commerce income data, and an unpublished Department of Agriculture study of the demand for meat.

price index would have been about 215 instead of 244.

An Analysis of Prewar Relationships

An extensive study has been made of prewar relationships of meat prices to meat consumption and factors influencing the demand for meat. The study was conducted jointly by the University of Chicago Institute of Meat Packing and the University of Illinois. It was initiated as a result of the interest of Mr. Oscar G. Mayer in the welfare of the livestock and meat industry and was largely supported by funds given by him to the Institute of Meat Packing.[1]

A multiple correlation analysis which was part of this study indicates that from 1922 to 1941 the average retail price of meat was very closely related to (1) disposable personal income, and (2) meat consumption. There was also evidence of a slight downward trend in the per capita demand for meat. What were considered to be the most reliable results were obtained when the retail prices were first adjusted for changes in the general price level as indicated by the Bureau of Labor Statistics consumers' price index. The logarithms of these were then correlated with (1) logarithms of a similarly "deflated" index of disposable personal income per capita, (2) logarithms of per capita consumption of meat, and (3) time in years (to allow for a trend in demand). The calculated prices obtained from the resulting regression equation (after converting them back to money of current purchasing power) are shown in Chart 4, where they are compared with the actual price index.[2]

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[1] The study is as yet incomplete, but it is expected to be published within the year.

That there is a very close correspondence of the actual and calculated prices prior to 1942 is apparent. During the period of price control the "actual" price index was lower than the calculated index, no doubt the result of regulation. Two factors were involved in this. First, price control kept prices at "regular" meat markets lower than they would otherwise have been. Second, the index was based on prices reported to the Bureau of Labor Statistics, and these reflected primarily the ceiling prices and not the "black market" prices charged in some instances.

With the removal of price controls about the middle of 1946, meat prices rose rapidly, and in the latter part of that year and throughout 1947 and 1948 they were much higher than those calculated on the basis of the prewar relationships.

Reasons for "Abnormally" High Meat Prices

It seems likely that the reason for actual prices being higher than calculated prices in 1947 and 1948 lies partly in the changed distribution of incomes as between different groups of people. In both World War I and World War II incomes of miners, factory workers, construction workers, and other manual laborers increased much more rapidly than did incomes of white-collar workers such as schoolteachers, clerks, and stenographers. Even though the average incomes of manual and clerical workers differ but little, an increase in manual workers' incomes presumably has more influence on the demand for meat than a similar increase in clerical workers' incomes, because the manual workers tend to have larger appetites.

Other factors have also probably contributed to the relatively high value of meats. In this connection it should be noted that total retail sales and especially sales of nondurable goods generally were high relative to disposable income in 1947 and 1948.[3] Among the reasons which have been advanced are the scarcity of durable goods and the fact that various services, especially rents, have taken a smaller share of income and hence resulted in more money being available for the purchase of goods.

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[2] This index differs slightly from that shown in Chart 1, which was the BLS index of retail meat prices. The BLS index uses (except for revisions) constant weights, whereas this index has variable weights from year to year depending upon the amounts of beef, pork, lamb, and mutton consumed in the year. It is, however, based on BLS data.

[3] Clement Winston and Mabel A. Smith, "Retail Sales and Consumer Income," *Survey of Current Business,* October, 1948, pp. 12-23.

All these situations appear to be largely temporary. Recently, incomes of clerical and salaried workers have been rising relative to those of wage earners. Rents and charges for services such as electricity and water have also been rising. It seems likely, consequently, that the retail value of meat and retail meat prices must not be expected long to remain as high relative to disposable income and meat supplies as they were in 1947 and 1948. In this connection it is pertinent to note that the value of meat was unusually high relative to disposable incomes during and for three years following World War I (Chart 2).

There is perhaps, danger of attaching too much significance to the observed prewar relationships. Certainly the various series of prices, consumption, and incomes which were used are subject to error. It is well known that estimated equations for time series data are not likely to work so well for subsequent years as they do for the period on which they are based. Consequently, it should not be expected that 4 to 5 years from now the calculated and actual price indexes will coincide as well as they did prior to 1941. Similarly it must not be assumed that *all* the difference between the calculated and actual price indexes for years since 1942 provides a precise measure of the abnormality of prices. Nevertheless, the discrepancy was so great in the past two years that it should provide a warning to both livestock producers and the packing industry that meat prices may not remain so high even if there is no significant decline in consumer incomes. Furthermore, with declining disposable income per capita or with increases in meat supplies there would be still more reason to expect further declines in retail meat prices.

The Current Situation

Thus far in 1949 retail meat prices have been running considerably below the average level for 1948, but close to the same level as during the first four months of that year. The Bureau of Labor Statistics index numbers for the two years are as follows:

	1948	*1949*
January	233.4	228.2
February	218.0	212.3
March	218.2	222.5
April	229.5	228.5
May	242.0	228.0
June	255.2	
July	263.0	
August	269.3	
September	265.9	
October	254.3	
November	243.1	
December	235.4	
Year	243.9	

Unofficial data indicate that prices in June were about the same as those of May.

Meat production thus far in 1949 has not been greatly different from last year. Hog and cattle slaughter has been larger, and sheep and lamb slaughter smaller, than a year ago. From January through May, meat production (excluding that from farm slaughter) totaled 8,087 million pounds this year compared with 7,982 million last year.

During the second half of 1949 meat supplies are expected to exceed those of the corresponding period of 1948 by more than they did during the first half. Last summer's shortage of meat is not likely to be repeated this year, and in the fall there will be considerably increased numbers of hogs coming to market. This year's spring pig crop was 15 percent larger than last year's, and was the largest for any peacetime year.

The demand for meat has continued at high levels, but there appears to have been some adjustment toward a more nearly "normal" relationship of the demand for meat to disposable income. Disposable income during the first half of 1949 is tentatively estimated at about 7 percent higher than a year earlier. With meat supplies during the first half of 1949 exceeding those of last year by not more than 2 percent, an increase in disposable income of 7 percent would have been expected to have resulted in higher rather than lower prices for meat had there not been some shift in the demand for meat relative to disposable income.

During the latter part of 1949 there is prospect of some further decline in the average retail level of meat prices as pork supplies increase. It is also likely that the effect of increased meat supplies may be reinforced by lower consumer incomes resulting from recent declines of industrial production and by further shifting toward a more normal disposition of consumer incomes. However, assuming that there is not much further decline in consumer incomes, no drastic decline in the average level of meat prices seems likely in the coming year.

The Future of Personal Flying

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PERSONAL air transportation may be divided into two categories — travel by airliners and travel in private or personal airplanes. Airline transportation is characterized by large aircraft moving on schedule to and from airports located at the important centers of population. The operations of airlines are similar in many respects to the operations of rail, water, and highway common carriers.

Personal flying, in contrast, is carried on in comparatively small aircraft capable of using almost any smooth area 1,200 feet or more in length for landing or take-off. The capacity of personal airplanes is normally four or five persons, and they are usually flown by nonprofessional pilots. Legally, private or personal flying is relatively unregulated and unaffected with the public interest. For the individual, it is a transportation service similar to that derived from the personally operated automobile.

Airline transportation is generally accepted as a part of our transportation system and, in spite of many difficult problems yet to be overcome, prospects for its continued economic growth seem to be clearly indicated. On the other hand, private flying during the past year has witnessed a decline in the number of pilot certificates issued, of personal aircraft manufactured, of flight schools in operation, and of airports. Except in the number of airports, this decline has been so marked and the resulting pessimism in certain quarters has become so great that a resurvey of the status and prospects of personal flying is needed.

This article will comment upon the three factors — airports, airplanes, and airmen — necessary to a healthy development of personal flying in the future.

The Airport

The airport picture in general is encouraging, although many of the small airports opened after the war have found themselves financially unable to survive. Large airports, on the other hand, are beginning to apply business principles in their operations, with a resulting benefit to their balance sheets. Medium-sized airports are improving their management also, although as with the small airport much remains to be done. The utilization of government surplus airports and their money-making capacities, even in small communities, have been an agreeable surprise. The increasing airline schedules and the funds granted under the provisions of the Federal Airport Act of 1946 have aided in improving the airport situation financially.

One postwar airport trend that is helping the private flyer is the movement toward the construction of small near-town airports, such as those at Oklahoma City, Chicago, Cleveland, and Milwaukee, and of landing strips on private farms. These will take care of his need for accommodations at the point of departure and at the destination and increase the utility of his airplane. The possibility for utilization increases as the number of available airports increases and also as the time needed to go from the airport to a business destination decreases. One impetus toward the creation of more landing areas is that where two or more landing strips were formerly needed, a single strip is often adequate today because of the development of the cross-wind gear and the further adaptation of the tricycle landing gear to small aircraft.

It is probable that 7,500 airports properly located would give a passably adequate landing area coverage for the United States. Over 6,000 airports exist at present, as shown in the accompanying table.

Airports are expensive. They range in cost from a few hundred dollars to several hundred million dollars. Yet the needs for national defense alone require the building and maintenance of many large airports which can be essentially civilian in their activities during times of peace. Airports are community assets even though the majority of the citizens may not be concerned directly with the landing area function of the airport itself.

The Airport Operators Council states that $77 million in state and municipally sponsored funds is available to match funds granted under the Federal Airport Act for airport construction. If this is true and an investment of such magnitude is subsequently made, the trend toward making the airport, in some instances, the largest single investment of a municipality will be accelerated.

Whenever additional and better landing and service facilities are provided, private flying shares with all other users in the real benefits derived from Federal, state, and municipal expenditures on airports. However, many of the benefits are offset considerably by landing fees, high service charges, increasing hangar rentals and tie-down charges, and the requirements calling for additional radio equipment in small airplanes.

Although there has been a recent increase in the number and general expansion of existing airports, it should be borne in mind that the standards for airport operations are not yet very high, the number of large airports is not adequate, and the distribution of present airports is not the result of careful study and planning.

The Airplane

Sales of personal aircraft are discouraging. Present sales are far below the predictions, many from government agencies, which estimated that 500,000 civil aircraft would be in use within ten years after the end of the war. The number of aircraft currently licensed in the United States is shown, by states, in the table. The forecast for new plane sales in 1949 is approximately 6,000 aircraft. This would be less than for last year, when only about 7,500 personal aircraft were sold. The decline in sales is staggering when contrasted with 15,617 in 1947, and 35,000 in 1946, even when allowance is made for pent-up demand resulting from the wartime conditions.

Purchase emphasis has changed from the two-place models to the four-passenger, family-executive type. The re-

UNITED STATES AIRPORTS AND CIVIL AIRCRAFT, JANUARY 1, 1949

State	Aircraft	Airports	Airports by Type				
			Commercial	Municipal	CAA Intermediate	Military	All Others
Alabama	996	97	43	32	2	15	5
Arizona	1,241	187	43	40	5	44	55
Arkansas	1,172	91	46	30	0	0	15
California	10,741	463	193	142	9	39	80
Colorado	1,349	101	33	44	3	3	18
Connecticut	706	33	23	10	0	0	0
Delaware	232	20	15	2	0	1	2
District of Columbia	706	3	0	0	0	2	1
Florida	2,787	208	50	93	2	55	8
Georgia	1,419	141	51	51	5	11	23
Idaho	841	109	13	56	3	2	35
Illinois	4,659	177	130	31	3	4	9
Indiana	2,775	169	129	30	1	5	4
Iowa	2,388	183	101	50	3	2	27
Kansas	3,119	202	87	86	3	11	15
Kentucky	869	67	43	12	1	2	9
Louisiana	1,051	95	27	30	4	6	28
Maine	636	73	39	24	0	3	7
Maryland	1,023	52	30	5	0	7	10
Massachusetts	1,425	80	53	21	0	4	2
Michigan	4,450	235	115	109	0	5	6
Minnesota	2,139	123	53	70	0	0	0
Mississippi	714	94	39	35	6	4	10
Missouri	2,315	119	67	40	5	3	4
Montana	1,027	101	16	58	10	1	16
Nebraska	1,761	137	58	56	4	2	17
Nevada	418	59	21	22	6	5	5
New Hampshire	308	32	16	12	0	1	3
New Jersey	1,672	93	71	11	0	5	6
New Mexico	763	111	31	33	11	8	28
New York	4,661	276	178	47	2	8	41
North Carolina	1,790	151	93	35	1	13	9
North Dakota	1,077	91	38	47	6	0	0
Ohio	4,414	251	195	34	4	4	14
Oklahoma	2,453	165	71	79	2	5	8
Oregon	1,795	115	37	44	4	0	30
Pennsylvania	4,248	225	174	39	3	5	4
Rhode Island	204	11	7	2	0	2	0
South Carolina	758	67	20	37	2	5	3
South Dakota	914	68	23	41	1	1	2
Tennessee	1,228	78	41	23	7	2	5
Texas	7,856	624	192	156	21	70	185
Utah	534	59	7	37	8	4	3
Vermont	212	23	12	9	0	1	1
Virginia	1,459	127	69	23	2	14	19
Washington	2,231	164	56	69	4	11	24
West Virginia	670	52	35	11	2	0	4
Wisconsin	2,202	157	91	56	1	2	7
Wyoming	506	55	14	26	5	1	9
Territories and Foreign	1,083						
U. S. Total	95,997	6,414	2,989	2,050	161	398	816

sult is that the value of the sales in dollars has not declined in direct ratio to the number of airplanes sold. However, salesmen and manufacturers derive small consolation from this fact.

Causes for the drop in personal aircraft sales are legion. Heading the list is the high cost of the aircraft. The rising cost of production has compelled manufacturers of airplanes to increase their prices in spite of their attempts to utilize modern manufacturing methods and thereby hold down prices. High purchase prices can be and are being reduced somewhat by mass production, and the opinion is widely held that, dollar for dollar, present models are a much better buy than were the airplanes produced before World War II.

Poor marketing may be another cause for the lack of sales. The producer, however, may refer to the history of the automobile for some marketing hints. While the analogy is not perfect, it is interesting to recall that in the early days the automobile manufacturers agreed that their new vehicle was designed to appeal to the wealthy sportsman. Early automobiles cost fantastic sums. For instance, in 1905, when there were about as many automobiles as there are now civil airplanes, a fine roadster sold for $6,500. This figure did not include extras, such as the top!

The early critics of the automobile adduced not only high purchase prices, but also high costs of operation, limited utility, lack of safety, high depreciation, high insurance costs, inadequate service facilities, and disturbing noises. They pointed out that the automobile was useless at night and in bad weather. These and other difficulties are present but are gradually being overcome in the lightplane field.

High costs of operation will decrease with more utilization. The cost of operation per hour decreases with aircraft use. The operation costs of airplane engines are similar to those of automobile engines. Already, in terms of cost per passenger-mile, travel by personal aircraft amounts to less than first-class rail travel and is comparable with automobile costs, assuming a fair amount of utilization of the aircraft. The trouble is that most personal aircraft are flown, on the average, probably less than 100 hours a year — possibly 10 to 20 percent of capacity. Such lack of use makes for high unit costs.

Aircraft utility is demonstrated best where rail and highway transportation have not been extensively developed, as in parts of Canada and South America. But there is plenty of evidence to support the economy of personal airplane transportation for business executives in the United States. One outstanding aircraft corporation accumulated facts from men who use personal aircraft as a time-and money-saving tool, and now bases its sales appeal largely on the utility of its lightplane and of its executive transport.

As for the difficulties of operation of light aircraft — that is a myth which has been exploded. It is no more difficult and takes no longer to learn to fly an airplane than to drive a car. Only average physical and mental attributes are required. Neither age nor sex is a barrier to successful piloting of light aircraft.

Private flying itself is intrinsically

safe. Safety is present in direct proportion to the ability and judgment of the pilot. Ninety percent of personal aircraft accidents have been found to be attributable to pilot error. Engineering devices are gradually reducing the likelihood of such accidents. Much attention is being devoted to lower landing speeds, nonsplintering windshields, jam-proof door handles, and other details which help to make private airplanes safer.

There is nothing unique about personal aircraft depreciation; they can be depreciated by any of the standard methods used for a car. On a passenger-mile basis, depreciation runs not over a cent a mile and is usually much less. Properly maintained, an airplane normally will last as long as an automobile. The first-owner depreciation is the largest, considered from the resale standpoint.

Insurance of light aircraft continues to be prohibitive if complete coverage is purchased. Most private owners do not carry all available coverage. If public liability, property damage, passenger liability, and all-risk hull insurance is carried, the annual bill may run to about 20 percent of the original cost of the aircraft. Most of the larger operators act as self-insurers or limit their coverage to ground risks. Consequently, insurance rates are not coming down as rapidly as had been hoped, in part because many of the better risks are not in the market.

The problem of inadequate ground facilities is rapidly being overcome. Airport operators have found that the rental of small hangars to private airplane owners is an excellent source of revenue. The result is an increasing number of available hangars. Costs are still high, however, since supply has not yet caught up with demand, and because of the relatively large amount of space required by the present-day airplane. In small communities the national average per month for hangar rent for personal aircraft ranges from $10 to $20, and in the urban areas the range is from $30 to $50. The alternative of leaving an airplane tied down in all kinds of weather is not attractive. However, tying down an all-metal aircraft in the open is not an unusual practice nor does it ordinarily damage the airplane. Tie-down charges vary. At some airports there is no fee, whereas at others — though not many — it may be as high as $15 per month.

Noise in any type of aircraft may be disagreeable and fatiguing. Experiments conducted by the Civil Aeronautics Administration, National Advisory Committee on Aeronautics, and private research organizations — especially the Aeronautical Research Foundation — have shown that the external noise level can be cut to that of the automobile through the use of anti-noise propellers, improved muffler designs, quieter engines, and other devices. Internally, the noise level has been reduced in the most recent personal airplane models to approximately that of a Pullman car. Every lightplane manufacturer is vigorously attacking the problem of eliminating aircraft noise, since scores of municipalities are beginning to pass local ordinances prohibiting or limiting personal airplane flights over their cities. Much progress has already been made, and engineers look for a satisfactory solution within the next year.

The personal airplane has had particular difficulty in achieving usefulness at night because of single-motor propulsion and limited navigation equipment, but the advances in motor reliability, navigational aids, and airways have rendered night operations much less formidable. Experiments with the unitwin light airplanes are promising and presage safer night flying. These airplanes, equipped with two engines, have but one propeller, and either engine alone can sustain flight.

Occasionally there is weather which simply is not flyable, and this will continue to be the chief drawback to wide utilization of the present type of personal aircraft. In spite of this fact, an imposing array of evidence in connection with the business use of private aircraft indicates an over-all saving of time. Recent case records show that with competent piloting amazingly few trips have been interrupted by adverse weather conditions. One owner of a Beechcraft Bonanza reported that he had been delayed by weather only three times in the first 1,000 hours of flying his aircraft on business trips. The present situation can be helped by improvements in forecasting, air navigation facilities, and aircraft. Some changes in the methods of teaching instrument flight and a revision of the instrument rating requirements for the nonprofessional pilot would also be helpful. Many problems for which the requirements were set up have been, or can be, engineered out of airplanes.

The present status of the personal airplane seems to show that, while progress is being made in the growth of this type of aircraft, something is needed to speed it up. Perhaps a Henry Ford is indicated or, as is more frequently suggested, a new airplane. Or, possibly, a new concept of private flying is necessary. There continues to be a surprising lack of appreciation, even among private flyers, of what the personal airplane will accomplish for them. In recreation alone, for example, the range of action possible with a personal airplane in a day or over a week end is double or triple that of an automobile. Business firms, too, have been slow to integrate the small airplane into their sales organization and executive travel in spite of demonstrable savings.

The helicopter is among the developments which might be helpful in speeding up the growth of private flying. It appears to be a solution for the limitations of airports and for weather difficulties in particular. It is probably true that if we had had a successful helicopter for as long a time as we have had a successful airplane, today's airplanes might be very different. At present the helicopter is only a potential aid to private flying, since it is hardly out of the experimental stage.

Three other developments are the roadable airplane — or the flying automobile — the helioplane, and the channel wing. The ideal roadable airplane must be easy to learn to fly, able to fly horizontally without nosing up or down, and as simple to operate in the air as on the ground. The present two-control airplane like the Ercoupe approaches this ideal. In it and similar aircraft, control is easier and more understandable, the elevator selecting the speed and the throttle controlling the ascent or descent. Satisfactory landings can be made by merely closing the throttle and letting the machine settle down onto the ground.

A roadable airplane becomes a ground vehicle when the wing is detached or folded back; therefore, it must have a four-wheel landing gear, and it must fly so that the axis is always parallel to the ground. The wheel base and weight and drag problems have been difficult to solve, but they have been worked out, for example, in the Spratt Controllable Wing Airplane. This experimental airplane has achieved roadability with its simplified controls and its four-wheel landing gear. The wing is mounted on a bearing which permits it to be moved angularly about its longitudinal and lateral axes. It eliminates the necessity of conventional ailerons, elevators, and rudders on small aircraft and makes airplane controls as simple as those on automobiles. The fuselage always remains level fore and aft during a climb or glide. Among the other experimenters who have had some success with the roadable airplane are Fulton, Gwinn, and Cornelius.

The most recent approach to a new and better personal aircraft is the helioplane, developed by Lynn L. Bollinger and Otto C. Koppen. It has been engineered to the requirements that the partners believe are necessary for a faster development of personal flying. It combines the appearance of a conventional airplane with some of the advantages of a helicopter. The powerplant is an 85-horsepower Continental with fuel injection. One of the unusual features of the helioplane is a special two-bladed, constant-speed, nine-foot propeller, with high thrust at low speeds. Other features are a split rudder, full-span flaps, leading edge slats, a new type muffler, and castering gear.

The helioplane is designed (1) to take off and land in less than 100 feet with full gross load in standard still air, and to clear a 50-foot obstacle from rest in well under 300 feet; (2) to make landing approaches with flaps down at about 30 miles an hour without stalling, yet have the ability with part flaps to increase air speed and maintain a comfortable 20 to 30 mile per hour ground speed; (3) to be absolutely spin-proof and stall-proof; (4) to be as quiet as a passing automobile; and (5) to cruise with full gross load at 108 miles per hour using only 75 percent power.

The channel wing, invented by Willard R. Custer some eight years ago, continues through tests to hold promise of aiding in the solution of the problem of short take-offs and landings and hovering potential.

The Airman

The third factor in the private flying picture is the pilot. No matter what type of aircraft is eventually evolved for private flying, someone must fly it. There are now about 500,000 licensed airmen in the United States, or about five pilots for every registered airplane. Of this number, 10,000 are certificated airline transport pilots, 210,000 commercial, and 280,000 private. In addition, there are over 100,000 student pilots. The tremendous increase in the number of pilots during the last ten years is due to the impetus of the CPT programs of the early forties, service training during the war, and the GI training programs since 1946.

Until the advent of the lightplane, the cost of flight instruction was $25 an hour and more. This included the use of the airplane. During the past decade great progress has been made in reducing the cost of learning to fly. Currently the cost of flight instruction averages approximately $8.50 an hour. Often the first eight or ten hours of flight instruction are given free or at a cost of $2 or $3 an hour to the purchaser of an airplane. For a private pilot license, between 30 and 40 hours, including at least 10 hours of dual instruction, are normally required. Often such time can be bought in a block for $250 to $500. In many respects the present-day 35-hour pilot is equivalent or superior to the 200-hour pilot of twenty years ago, because of better standards of controlled instruction.

Experiments which give greater air training in a shorter time and others which are being conducted with ground training devices may further decrease the cost of flight instruction. Also, the changing attitude on the part of education and business is bound to result in lower cost. Ninety-five percent of the businessmen recently surveyed indicated that they consider ability to fly a business asset. Air training is now an established part of education in many schools. It is being taught both as a vocational and as a cultural subject. The GI training program has inflated flight instruction costs in some instances, but probably in a year or so costs will be seeking a lower level than at present.

Flying clubs and partnership arrangements are tending to reduce instruction and operation costs. Promotion of flying rather than its discouragement is the basic principle of a successful flying club. The policy is to have flying rates as low as possible, but at the same time to have club dues high enough to pay fixed expenses and to eliminate the members who would do only a limited amount of flying.

Possibly these facts are less of a sales argument than the underlying, personal satisfactions that can be derived from flying. The atmosphere gives a three-dimensional freedom in one of the few remaining frontiers of freedom. One emerges from the experience of flight with emotional strength restored, mind refreshed, and life's basic values fitted into their proper relationships. In the upper air is the most nearly perfect clearness on the planet, and from the upper air can be viewed the scenes which are forever hidden from surface eyes.

The Future

The future of private flying revolves around the development of the three factors which have been discussed — the airport, the airplane, and the airman. Each, of course, is dependent upon the other, but it is probable that the key to the evolution is the aircraft itself and, therefore, progress will be slow until the immediate problems of high *cost* and lack of high *utility* are solved.

By using the aerodynamic knowledge which is now at hand, and from research in progress, industry *could* produce a personal aircraft that would be easier to fly, faster, quieter, more dependable in difficult weather conditions, and cheaper to operate than any personal airplane now on the market.

However, because the incorporation of these desirable features would result in increased cost to the purchaser, industry has hesitated, understandably, to develop them, believing that to do so might destroy the present market.

But, conversely, who can predict what markets a new airplane with these improvements might open up? It is highly probable that a wholly untapped market is waiting for this added utility in the personal airplane.

Nevertheless, although an increased market would bring about a decline in production costs, what is needed is not necessarily a cheap airplane per se but one which can produce over-all savings for its user.

Greater usefulness can, likewise be predicated upon several technological achievements: (1) a complete reliability of power sources; (2) a reliable and inexpensive method of land-air communication; (3) a simple and inexpensive means for dealing with icing conditions on the airplane and in the engine; and (4) a foolproof and inexpensive means of accurate position determination.

The question is not *whether* these and other advances will come, but *how soon* we will have a transportation medium which combines the best in the automobile and the best in the airplane and is better than either is today.

The Common Sense of Sampling

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WITH THE GROWTH of our nation, increasing reliance is being placed upon sampling as a means of obtaining statistical information. This is only a natural development, for not only is the cost of questioning all the members of a population, or even a particular group, often prohibitive but up-to-date information can rarely be obtained by a complete census. Thus, the results of the United States Census are not released in full until two or three years after the date when the census is taken. Today, almost all of our current statistical information is based on samples — wages, prices, employment, unemployment, production, retail trade, department store sales, to mention a few; and business firms use sampling as a tool for determining facts about their businesses that would not otherwise be known — popularity of brand names, characteristics of their customers, and potential demand for new products.

Despite the widespread use and popularity of sampling, very little information is available to the nontechnical reader on proper methods of sampling or on alternative sampling techniques. Largely as a result of this fact, the recent fiasco of the public opinion polls in predicting the outcome of the presidential election has added to the bewilderment on the subject, and increasing anxiety has been expressed as to the reliability of sample surveys in general.

This would, therefore, seem to be a propitious time to stand off at a distance for a while and consider the logical principles upon which sampling is based. We can then examine the extent to which modern sampling methods conform with these principles and, finally, what can and cannot be expected from samples based on these methods. In the ensuing discussion, primary reference is to market and public opinion sampling, the type of sampling used to gauge public opinion on different issues or to determine consumer acceptance for specific products. However, unless explicit reference is made to market or public opinion sampling, the same statements are valid for other types of sampling as well.

It should be noted that this article deals only with sampling methods and techniques, and does not deal with the various operational aspects of sampling surveys, such as questionnaire construction, coding, editing, and tabulation. The interested reader will find ample references on these latter subjects in statistical and marketing literature.

Unrestricted Sampling

In the great majority of market and public opinion surveys, the researcher is faced with a choice of one of three broad sample techniques: unrestricted sampling, quota sampling, or area sampling. The latter two are generally considered as the two main variations of stratified sampling, in which a population[1] is divided into strata, or subgroups, and sample members are selected from each stratum.

By an unrestricted sample is meant the so-called random sample, according to which sample members are selected at random from the population as a whole. In unrestricted sampling, no attempt is made to ensure the representation of particular groups, the theory being that the process of sample selection would automatically tend to ensure such representation. Thus, if 65 percent of Chicago adults prefer bittersweet chocolate to milk chocolate, a randomly selected sample of Chicago's adult population would tend to show the same proportion favoring bittersweet chocolate.

Note that we can say only that the sample proportion will *tend* to approach the true (unknown) population percentage. Even under perfect sampling conditions, when all other requisites are fulfilled, an estimate based on a sample will not be perfectly accurate. (As a matter of fact, the mathematical probability of such an event is zero in most sampling problems.) A certain discrepancy will invariably arise because of the influence of random forces in the selection of sample members. If the average weekly wage of white-collar workers in Illinois is $54.45, one sample of, say, 500 white-collar people in Illinois might have an average weekly wage of $52.68, the average for another sample might be $56.79, and so on. It would obviously be extremely unlikely that the sample estimate would turn out to be exactly $54.45.

This discrepancy between the estimate based on the sample and the true value is known as the *sampling error.* Its magnitude is gauged by special error formulas and depends primarily on the particular sampling technique, or design, employed and on the sample size. For most sample designs the sampling error decreases as the sample size increases, though there are some exceptions to this rule. However, other sources of error are not eliminated by increasing the sample size.

The sampling error is measurable only when the members of the sample are selected in such a way that every member of the area or population being studied has an equal chance of being included in the sample every time a sample member is drawn. This probability principle of sample selection forms the basis of the mathematical laws of probability from which the sampling error formulas were derived;[2] and this is the meaning of random selection.

In practice, random selection is not difficult to attain. If a list of the members of the population is available — as would be the case, for example, in sampling all retail stores in Illinois — it is a simple matter to number each store and then select numbers at random from tables of random sampling numbers. The use of such tables ensures random selection; one such set has been compiled by the Interstate Commerce Commission. If a list of the population is not available, random selection is still possible through various procedures. For example, a randomly selected sample of families in New York City could be obtained by first selecting a number of blocks, or areas, at random, enumerating all dwelling units within the sampled areas, and then selecting the desired number of dwelling units at random from the enumerated list; this is a type of area sample, to be discussed in a later section.

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[1] The word "population" is used in its more general sense to denote the universe from which a sample is taken. Population may not necessarily refer to individuals; for example, we may sample the population of farms in the United States, or the population of homes, or of retail stores, or any other population.

[2] In some cases, the principle is modified so that the probability of selecting a particular unit is proportional to its relative size in the population. For instance, in sampling retail stores the probability of selecting each store could be made proportional to its relative sales volume. This procedure possesses the advantage of assigning more weight to the larger store, and improves accuracy in estimating aggregates.

If random selection is not used, not only are the sampling-error formulas invalidated, but bias in sample selection enters the picture. In brief, bias indicates the extent to which samples are not representative of their populations as a result of various prejudices or errors accumulated in the sampling process, and is generally not reduced by increasing the size of the sample.[3] The classic illustration of bias, the erroneous assumption by the *Literary Digest* that a sample of several million telephone owners would provide an accurate portrayal of the voting preferences of the entire nation, clearly brings out the independence of bias and sample size.

Bias is not measurable. Of course, sometimes bias may be estimated from hindsight knowledge, but usually even this is not possible, which is why the absence of bias is so essential. Though the sources of bias are manifold, it is probably most likely to arise when random selection is not employed. For when particular members of a population are more likely to be selected than others, an atypical representation of the population is almost certain to occur. For example, questioning housewives at home during the day on shopping-hour preferences would result in an atypically large proportion in favor of daytime shopping, because working wives, who shop mostly in the evening, would be almost completely excluded from the sample.

In practice, many samples are still constructed in some nonrandom fashion and the error formulas are applied to measure the sampling error, on the theory that the result should provide an "approximate" idea of the sampling error and that the danger of bias would be negligible. In certain cases this procedure may yield unbiased estimates of the sampling error — but in other cases it may not. Unfortunately, the present knowledge of this subject is too scanty to permit us to distinguish between these two types of cases. In other words, we have no way of telling in advance whether the sampling error of such a sample would be biased by 5 or by 50 percentage points. Because of this uncertainty, the computation of the sampling error in such cases is an extremely risky procedure, to say the least, and that is why random selection is of such paramount importance.

When the principle of random selection is followed, unrestricted sampling can be a very useful sampling technique, and is often far more reliable than a stratified sample. This is particularly true when little or nothing is known about a population. In such cases, no real basis exists for designing a stratified sample. In other cases, the relevant population characteristics may be known, such as, for example, that a survey of family incomes should be stratified by occupation and education of family head. However, if the distribution of family heads in the population by occupation and education of family head is not known, an unrestricted sample is likely to be cheaper and more accurate than a stratified sample based on possibly inaccurate or costly preliminary estimates of the population distributions.

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[3] Actually, bias may arise in any of the steps involved in the sampling operation, such as in selecting interviews, designing a questionnaire, or editing. For an excellent discussion of the types of bias encountered in sample surveys, see W. E. Deming, "On Errors in Surveys," *American Sociological Review,* Vol. 9, No. 4 (1944), pp. 359-369.

Quota Sampling

In quota sampling, the population is broken up into divisions, or strata, according to the distribution of the characteristics most closely related to the subject being studied; for example, in studying purchase habits for jewelry, subdivision by income level would be extremely relevant. A sample quota is then set for each stratum, and sample members are selected from the stratum — theoretically, in a perfectly random fashion — until the quota is filled. These quotas are usually either in proportion to the relative size of the strata in the population (proportional sampling) or allow for differing degrees of heterogeneity among the various strata (disproportionate sampling).

For example, to take an extreme case, if all families in stratum A have identical purchase habits but the families in stratum B, which is half the size of stratum A, fall into 10 distinct purchase-habit classes, a 1 to 10 quota ratio would prove far superior to the strictly proportional 2 to 1 sampling ratio, assuming the cost of sampling to be equal among all strata. Where marked heterogeneity is present among strata, disproportionate sampling is likely to be either cheaper than proportional sampling, i.e., a smaller sample size would be required to maintain the same degree of accuracy or, for the same size of sample, it would result in a lower sampling error.

Though quota sampling is the most common technique in market and public opinion sampling, it has been severely criticized on two main grounds in recent years because of the manner in which it has been applied in practice. One criticism is that quota sampling is not as accurate as its users claim, and, in fact, is frequently less accurate than a simple unrestricted sample. Theoretically, the sampling error of a quota sample is less than that of an unrestricted sample of the same size because of the division of the population into strata. However, mathematical statisticians have pointed out that this is true *only if the population distributions are known with perfect accuracy,* which, of course, they are not. Now, when the effect of the inaccurate distributions is taken into account — and there is a formula for doing so — the sampling error of the quota sample is as likely as not to be more than that of an unrestricted sample. Unfortunately, this is rarely, if ever, done; many quota samplers are completely unaware of the existence of such a formula.

The second, and even more basic, criticism is that the sampling-error formulas are not even applicable to quota sampling, because the basic theoretical requisite for the validity of these formulas — random selection — is not fulfilled. Since in most surveys using this technique the selection of sample members is left to the arbitrary judgment of the interviewers, not every member of a particular stratum has an equal chance of being selected, and hence there is no knowing what the sampling error might be.

The most frequent, and also most relevant, example put forth in support of this contention is that of quota sampling a city's population (families, say) by income level. In other words, suppose we know how the city's families are distributed by income level and that the particular characteristic we are estimating, say, intention to purchase a television set, is closely related to income, and we wish to set up a quota sample to estimate this characteristic by income levels and for the total city. Since identification of the members of one income level as distinguished from those of other income levels is asserted to be impossible, how can the members of any one income level have an equal probability of being selected in the sample?

Actually, random selection is possible in such a case, although the method does not seem to be widely known. It might therefore be useful to outline the actual procedure. As an illustration, let us take the problem of obtaining a quota sample by income level, assuming that we know the city's families to be distributed in the proportion, 10:30:40:20 in four income levels, A, B, C, D, respectively. If a proportional sample of 400 families is desired, we would want 40 families in income level A, 120 in income level B, 160 in C, and 80 in D.

Sampling is carried out by applying mechanical selection to the city *as a whole,* not to each income level individually, as was formerly done. Each member of the sample is classified in one of the four income levels. As soon as the quota for one income level is filled, all succeeding selected families which happen to be in that income level are discarded. But sampling continues from the city as a whole until all income quotas are filled. For example, if the quota for income level D is filled after sampling only 300 families, sampling continues just as before except that all D families sampled after the 300th family would be discarded.

This procedure fulfills the requirements of random selection because every member of any particular income level has an equal chance of being included in the sample. Of course, the probability of a member of one income level being chosen relative to the probability of selection of a member of any other income level is proportional to the relative numbers at the two income levels, but this does not affect the validity of the procedure.[4]

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[4] Although this method closely resembles area sampling, it is not the same as the latter. The basic difference is that in area sampling the sample members are chosen from certain predesignated or randomly selected areas within the population, whereas the sample members in this scheme are drawn from the population at large. Therefore, this is not an area sampling procedure, and does not require the detailed maps on the basis of which area samples are generally drawn. It might also be noted that greater

Area Sampling

The main consequence of the criticisms of quota sampling has been the increasing importance of area sampling techniques, a development that has taken place only within the last ten years or so. Area sampling is pretty much what the name implies. The population is broken up initially into areas, and a number of these areas are selected either at random or in some stratified manner for inclusion in the sample. The sample members are then selected from these sample areas only, usually with the aid of maps of some kind, e.g., maps of dwelling units. Besides ensuring random selection of the sample members, this procedure reduces interviewing costs as a result of the concentration of interviewers within specific areas. Thus, it is much cheaper to interview 20 farmers in one county than one farmer in each of 20 different counties. Consequently, where the cost of additional materials, e.g., maps, does not nullify this reduced interviewing cost, an area sample may prove more economical than even an unrestricted sample.

A variation of area sampling which reduces interviewer travel and time costs to a minimum is *cluster sampling.* In this type of sample, the sample members are selected in groups instead of individually. For instance, instead of selecting one family from each of 1,000 blocks, a cluster sample could be constructed by selecting ten adjoining families from each of 100 blocks. In some instances, a cluster sample is likely to be more accurate than the corresponding area sample of the same size.

It might be noted that area samples may be either unrestricted or stratified. A sample of blocks selected at random from New York City as a whole would be an unrestricted area sample, but if the blocks were selected separately from each of the five boroughs, a stratified sample would result.

The relative merit of quota sampling versus area sampling is still the principal topic of debate in sampling circles, though area sampling seems to be more than holding its own. Aside from the merits of the case, quota sampling has lost heavily because of the frequently incompetent manner in which it has been handled. Most of the so-called "scientifically designed cross sections" in market and public opinion research were based on quota samples, and are, unfortunately, anything but scientifically designed.[5] Then, too, the fact that nearly all of the presidential public opinion polls in the last election were quota samples constituted a heavy blow for that technique, although it is doubtful that the mere substitution of area sampling for quota sampling would have altered the results.

In general, quota samples are found to be most useful when the relevant population distributions are pretty accurately known. In such cases, the sampling error will be a good deal less than that of other sampling techniques.

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accuracy can be obtained by retaining sample members in excess of their quota instead of discarding them, and merely weighting the average or aggregate figures for the different strata by the relative sizes of these strata in the population. The sampling error of such an estimate will be less than if excess sample members had been discarded (assuming that every stratum has, at least, its full quota).

[5] The misuse of this phrase has been so flagrant that the reader would do well to view any sample survey described in this manner with the utmost skepticism.

Otherwise, either an unrestricted sample or some type of area sample would be desirable, depending on the conditions of the problem. In a particular case, the most desirable technique can be selected only after a comparison of costs and sampling errors of alternative techniques.

For example, a preliminary study may reveal that an unrestricted sample costing $2,500 would yield an estimate of average coffee purchase per family in a certain city with a sampling error of 6 units, whereas a quota sample of the same size would yield the same estimate with a sampling error of 4 units but at a cost of $3,000. Given these facts, the research department can evaluate the desirability of spending an additional $500 to reduce the sampling error by two units.

Other things being equal, the best sample technique is that which yields the desired data with the lowest sampling error at a given cost, or with a given sampling error at minimum cost.

Of course, other things may not always be equal. Thus, one type of sample may be more desirable than another type in a particular survey, but if the time limit is too short to permit the first type, the latter or some other type of sample is the only alternative. The principle must clearly be modified to the extent that special circumstances are present. But it is this basic principle that governs the selection of a particular sampling technique in a carefully designed survey.

Other Sampling Procedures

Recent years have seen the development of at least two new sampling methods that show great promise not only of increasing the reliability of sample surveys but of leading to substantial savings in time and money, as well. Since neither method has gained general recognition as yet, it would seem appropriate to describe them briefly at this time.

Both of these methods complement, rather than substitute for, the three broad sample techniques described previously, though at the present time they are primarily applicable to unrestricted sampling. One method is a variation of random selection of the sample members known as *systematic selection.* This involves the numbering, or ordering, of each member of the population and then selecting every *nth* member for the sample, where *n* is generally the ratio of the size of the population to the size of the sample. Thus, if a sample of 500 people is desired out of a list of 100,000, every 200th person would be selected starting with a randomly selected number from 1 to 200. If, say, the initial number were 167, the sample would contain numbers 167, 367, 567, 767, etc.

Systematic selection fulfills the fundamental requisite of random selection, for since the initial number is selected at random, every member of the population has an equal chance of being selected. The difference is now that not every *combination* of members has an equal chance of being chosen. Therein lies the advantage of the method, for when the characteristic being studied is related to the order of members in the population the use of systematic selection guarantees the representation of all elements. For example, if the members of a population are ordered with respect to geographic location, systematic selection would ensure the presence of members from the different areas in the sample. Because of this fact, the method can lead to greater accuracy than if the usual random selection were employed.

The second method is the revolutionary new device of *sequential* analysis. At present, sequential analysis is applicable primarily to problems in which a decision is to be made as to one of two mutually exclusively alternatives on the basis of sample data. A manufacturer trying to determine which one of two types of instant coffee is the more popular is an example of such a problem. By the conventional method, the sample size is set in advance (usually as the minimum sample size that would achieve a desired precision), a sample of the stipulated size is taken, and the data are analyzed after sampling is completed. In sequential analysis, the sample size is not set in advance. Instead, the data are analyzed while sampling is going on. By means of such a running analysis, any clear trend in favor of one alternative is immediately detected. Once the desired precision is obtained, as determined by appropriate formulas, sampling stops. *The result is just as reliable as that obtained by the usual procedure, although the sample size may be reduced by more than half.*

Though the mechanics of sequential analysis are somewhat complicated, the reason for the method's great advantage is a matter of common sense, and may be illustrated by the following example. Suppose a cereal concern conducts a test to determine whether its recently introduced *Tootsies* cereal is proving more popular than its established *Crackles* cereal. Actually, a heavy majority of the people, say 95 percent, prefer *Crackles*. By the conventional method, the popularity of *Crackles* would not be apparent to the researcher until after a (predetermined) sample of several hundred people had been interviewed and analyzed. But by the sequential method, the running analysis of the cumulative results would bring to light the greater popularity of *Crackles* very early in the sampling process — perhaps after only as few as 20 observations — *and with the same reliability as if several hundred interviews were treated by the usual method.*

The potentialities of sequential analysis for market sampling are tremendous, especially in product- and copy-testing, where such problems are most prevalent. Those who have the farsightedness to acquire a working knowledge of the method will find themselves amply rewarded in terms of both economy and efficiency.

Conclusions

In closing, a few pointers applicable to sampling operations in general would seem appropriate. For one thing, no sample is representative of all the characteristics of a population at a given time. A sampling operation is begun by specifying what population is to be studied, what characteristics of this population are to be estimated, and to what date the estimates should pertain. The required estimates are then made on the basis of a sample selected in such a way as to be representative of this population at the right time with respect to the characteristics being studied. A sample designed to estimate soap purchases of United States consumers will not necessarily yield accurate estimates of cereal consumption. It is also true that a sample that provides accurate estimates of a characteristic at one time will not do so for other times.

All this may seem very obvious and very elementary. Yet, it was the neglect of one of these considerations, the time element, that was mainly responsible for the failure of the public opinion polls in the last presidential election. Had they continued sampling until the day before the election and based their election forecasts on these late surveys instead of having stopped sampling anywhere from 12 days to 3 months before the election, they might well have come pretty close to the final result.

In addition, it cannot be overemphasized that sampling is based on the theory of probability. All population estimates based on samples are made with a certain probability. Since for a particular sampling technique the probability of an accurate estimate is generally related to the size of the sample some compromise is necessary between accuracy and sample size, or cost. In market and public opinion sampling this compromise is usually effected by employing a .95 probability level. This means that in 95 samples out of 100 (of the same size and type) the population value will be covered by the sample estimate, the latter being expressed as a certain interval or range. But what is generally overlooked is that this also means that 5 times out of every 100 the estimate will prove faulty — and there is no guarantee that this particular sample may not be one of the five. Realization of this possibility, and its widespread popularization by sampling organizations, would go a long way toward contributing to the public's understanding of sampling.

Toward Economic Stability

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AT A TIME when the great business boom of 1942-49 appears to be subsiding, we may well consider the long-range prospects for our economy. Are we likely to revert to the overwhelming business fluctuations of the past? Or may we reasonably look forward to greater economic stability than we have experienced before?

In seeking answers to these questions, we must take into account the profound changes in the structure of our society, and in our thinking, that have occurred during the past twenty years. We must consider how these changes may have influenced the stability or instability of our economy.

In my judgment, we have today a more stable economy than we had a generation ago — an economy that will be less vulnerable to depression and more resilient in recovery.

The Growth of Knowledge and Experience

This potential stability that has been built into our economy derives primarily from the knowledge and experience we have gained since the fateful year of 1929, in meeting the vicissitudes of depression, war, and inflation.

Under the impact of the problems faced during this period, the science of economics has developed at an almost unprecedented rate. We have today a far more effective intellectual equipment to guide private and public economic policy than was available a generation ago. Though economists are far from satisfied with their accomplishments and many problems remain, the advances in economics are in some ways comparable with the more spectacular advances in the physical sciences.

Similarly, great strides have been made in the accumulation of reliable and timely factual information about the economy and its behavior. To realize this, one need only compare the wealth of statistical data at our disposal with that available in the twenties. Particular mention should be made of the statistics on national product and national income which provide a sort of bookkeeping system for the total economy that is useful in precisely the same way that accounting records are useful to private business firms.

Certain vast experiences or experiments during the past twenty years have left an indelible imprint on the minds of most people — not only on the minds of our political, business, and intellectual leaders, but also of the public at large. The first of these was the colossal failure of the kind of economy we had in the 1920's to maintain economic stability. Though the economy of that day was free from detailed governmental controls, was without serious labor disturbances, and was subject to only the mildest kind of taxation, it was nevertheless vulnerable to deep and devastating depression. Rightly or wrongly, the disastrous experience of the early 1930's gave rise to profound and widespread skepticism about the beneficence of extreme laissez faire as a form of economic organization, and led many people in all stations of life to consider the possibility that government might well play a more active role in economic affairs. Second, our leaders and the public at large have witnessed the fact that government spending — if pursued on the grand scale — can overcome depression and produce full employment and prosperity. This was seen in Italy and Germany during the rise of Fascism and Naziism, in various Scandinavian countries, and, during the late war, in the United States. Third, as a result of experience, our people are much less frightened of a national debt than they were formerly. Though the debt is a subject of great concern and interest, and many people are surprised that it can be so large without financial degeneracy, yet they have clearly seen the national debt pass $50 billion, $100 billion, and even $250 billion, while the credit of the United States has remained unimpaired and the dollar has continued to be the world's strongest and most coveted currency.

The great development of mass media of communication and the change in the character of the daily stream of news, information, analysis, and comment have also strongly influenced the thinking of our age. These agencies include the radio with its frequent news, its commentators, and its political speeches; the news magazines, most of which have come relatively recently on the scene; the many business "services" which inform their clientele on economic and political affairs; the improved and enlarged new coverage of our daily papers; and th newspaper analysts — the Walter Lippmann's and the Dorothy Thompson' The educational influence of all th has been and is enormous.

As a result of the developments i economic science and in statistic through the sheer experience of livin through depression, war, and inflatio by observing great economic experiments at home and abroad, and because of the improvements in the communication of ideas through mas media, we are today a much wiser better informed, and more sophisticated people than we were a generatio ago. We are far more literate in economics and politics. This applies to ou professional economists, to our statesmen, to our leaders of labor and industry, and to the rank and file o people everywhere. This is a factor o the first order in making our economic system more stable. The increase i knowledge and experience means bot that we are technically able to formulate and carry out public and privat policies in the interests of stability, an that the general public is receptive t such policies and will actively suppor them.

The attitude of the public is particularly important. Today one ca scarcely doubt that our people ar aware of the problems of economi instability and regard the governmen as the agency which has responsibilit for maintaining economic stability. N longer will it be possible to turn 10 o 15 millions of people out of their job and explain to them that their pligh is due to an act of Providence or to unfortunate miscalculations in the privat investment market. They will expect prompt action from their government, and any government which fails to meet the situation will be asking for its own repudiation.

Tangible Results of Increased Knowledge and Experience

There are several tangible and practical results of the experience and knowledge gained over the past twenty eventful years. First, and perhaps most obvious, is the moderation displayed during the current boom. There is no doubt that we have been and are in one of the great booms of history. But the behavior of businessmen, of investors, and of consumers generally has differed greatly from that in comparable earlier booms. There has been less speculation, less overbuying, and less splurging. People have entertained healthy doubts about the indefinite continuation of the boom. There has been little talk about a "New Era" and much consideration of a possible depression. In the stock market, no amount of fabulous earnings has been sufficient to stir up bullish enthusiasm. On the whole, this has been the soberest boom on record. That fact has been an important factor in sustaining the boom, because excesses have been avoided, speculative losses have been minimized, and the government has not been called on, as in the past, to repress the boom by drastically curtailing credit.

Another tangible result of the experience gained and the new attitudes derived therefrom is an increasing tendency for businessmen, labor leaders, and farm leaders to consider the social interest in their private policies and decisions. This does not mean that the millennium has arrived or that altruism has replaced self-interest. Nevertheless, businessmen have shown increasing interest in enlightened personnel policies, community relations, employment stabilization, and moderate price policies. Similarly, labor leaders and farm leaders are increasingly responsive to the social interest and frequently consider social consequences and total economic effects in the formulation of their policies.

A third tangible result of the changes referred to is that the general public is highly sensitive to the problem of economic fluctuations and would look to government to promote or guarantee economic stability. Particularly in the event of a depression, the public would demand vigorous leadership and positive action from government.

Finally, a fourth result of the increase in our knowledge is that it is now technically possible for government to meet the public demand for economic stabilization with an informed, coherent, and rational economic policy. With the development of modern economics, with our wealth of statistical knowledge, and with the experience gained at home and abroad, such a policy is more nearly feasible today than ever before. The President's Council of Economic Advisers provides an organization for formulating such a stabilization policy.

Institutional Changes Conducing to Greater Stability

The impact of the knowledge and experience gained during the past twenty years has been dwelt upon at some length. This has been done because of the overwhelming importance of the changes that have taken place in the realm of ideas. Now certain institutional changes of those twenty years which may also portend greater economic stability will be discussed.

The first of these is the increase in the size of government. For better or for worse, we have emerged from the events of the past generation with a large government and one that is likely to remain large. Government is one industry which is not subject to the business fluctuations that affect all other segments of the economy. If anything, governmental activity is likely to grow in times of business depression and contract — or at least grow at a slower rate — in times of business prosperity. Therefore, big government provides a sort of anchor for the economy and its net influence is toward stability.

A second institutional factor has been the drastic change in the character of our tax system. Twenty years ago, our tax revenues were derived chiefly from excises, import duties, property taxes, and income taxes at very low rates. Today, a large proportion of our revenues is derived from personal income taxes, levied at steeply progressive rates, and from heavy corporate income taxes. Although there are wide differences of opinion on the effect of these tax changes, especially as to their influence on economic incentives, yet a strong case can be made for the view that their influence is in the direction of economic stability. The effect of graduated taxes at high rates is to restrict the flow of funds seeking investment and therefore to reduce the possibility that the flow of investable funds will exceed the available investment opportunities.

Third, the existence of a large publi debt and the possible need for additional public borrowing in the even of a war have led to a cautious an moderate credit policy. Whereas i earlier booms, the monetary and credi authorities have tended to pursu overly repressive policies, today, facin the problem of maintaining the integrity of Federal finances, they hav skillfully pursued a middle-of-the-road credit policy that has been neithe strongly inflationary nor drastically deflationary. Without the large debt and the need for protecting the financia position of the Federal government, the authorities would have been much more vulnerable to the many pressures for drastically tightening up credit and might have terminated the boom some time ago.

Fourth, the growth of the public debt of the United States has led to a great increase in the financial liquidity of the American public. As a whole, the American people hold relatively more liquid assets in the form of either bonds or cash than ever before. These liquid assets will provide a cushion of readily available purchasing power in the event of depression.

Fifth, by an unconscious evolutionary process, the United States has been drifting toward a compensatory fisca policy. By that, is meant a policy unde which the revenues and expenditure of the government are adjusted to compensate partially for changes in demand generated elsewhere in th economy. Under the traditional doctrine of budget-balancing in each fisca year, tax rates would tend to be reduced in an inflationary period and to be increased in a deflationary period. Thus, governmental action would tend to pump more purchasing power into the economy in periods of inflation and less in periods of deflation. As a result the instability of the private economy would be enhanced or reinforced. Today, governmental policy, as expressed both by the executive and legislative branches and by public leaders, tends toward increased tax rates and reduced public spending in times of inflation, and toward reduced tax rates and increased public spending in times of deflation. With this policy, the effect of governmental fiscal operations is to compensate in part for changes in private economic activity. It is not suggested that we have reached the stage of a comprehensive and semi-automatic compensatory fiscal policy, but rather that the policies which actually tend to evolve resemble those of a full-blown compensatory fiscal policy.

Sixth, the effect of our social security system and of related programs is toward economic stability in that the receipts going into the trust funds are greater in periods of prosperity than in periods of depression, and expenditures from the trust funds are greater in depression than in prosperity.

Seventh, the farm price supports will tend to bolster an important segment of purchasing power in the event of depression.

Eighth, the banking system is stronger and enjoys greater public confidence than it did during the 1920's. This is due to the fact that a large part of bank assets is in the form of government securities; moreover, deposits are partially protected by the FDIC.

Ninth, the rise of organized labor will mean stern resistance to wage cuts in the event of depression. This may also have the effect of bolstering purchasing power.

Bias Toward Inflation?

The experience of the great depression and the intellectual and institutional developments to which it gave rise have produced powerful supports for the economy which will become effective in the event of depression. There are some economists who argue that these supports are so strong that they have overcompensated for any likely depression and that the overriding danger is inflation. More specifically, it is argued that our fear of depression will lead us to adopt strongly inflationary policies whenever we are faced with the slightest downturn in business. As a result, recovery from depression will be rapid but an inflationary potential for the subsequent recovery will be generated. Thus, the economy will be consistently biased toward even higher prices.

Personally, I do not share this view. After the postwar demands for durable goods have been filled, we shall again face the prospect of periodic depression, and the supports we have built beneath our economy as a result of the experiences of the past twenty years are not necessarily excessive. On the other hand, this underpinning is considerable and important, and will probably reduce the severity of future depressions.

Books Reviewed

Practical Advertising. By Harry P. Bridge (New York: Rinehart and Company, Inc., pp. xxii, 842. $6.50)

There are several existing books which provide well-written and comprehensive treatments of the general principles of advertising. It would appear, in fact, that this subject already is amply supplied with textbooks. Another advertising principles book has just appeared which, nevertheless, is well worth being brought to the attention of readers.

The author of this new work, unlike some advertising authors, is a practicing advertising man and head of his own firm, in Philadelphia. If his book had no other distinction, it is the longest book on the subject. Its content has other distinctions, however, which should have strong appeal for businessmen who seek a working knowledge of advertising methods. Teachers too will be interested in it, although perhaps to a lesser degree.

This book is appropriate for businessmen because Mr. Bridge places a literal interpretation on the term "practical" in the title. It strives rather successfully to realize its subtitle, "A comprehensive guide to the planning and preparation of modern advertising in all of its phases." It seeks to give down-to-earth "know-how" through all the stages of advertising planning, creation, and publication. Of course there is no substitute for creative genius in preparing advertising, but this book seems to give the maximum possible information within a single volume. Small businesses will particularly appreciate it for it was designed for their needs.

Teachers are likely to find the book valuable as a reference source on advertising techniques and ideas. It should also be a suitable textbook for the type of students who are in evening or extension courses, who crave the "practical" in learning advertising skills and policies. For advanced courses it may serve as a reference book. For the usual introductory college advertising course, on the contrary, the book has limitations in its failure to deal adequately with certain topics which are important in the beginning student's understanding.

The author gives only brief consideration to the social and ethical responsibilities of advertising and apparently none to its economics. This may have been intentional if he did not design this as a college textbook. For all readers, however, it is regrettable that he devotes only a small space to explaining the organization of advertising (merely 20 pages) and little more to the essential subject of research.

On the balance, these weaknesses are greatly overshadowed by the book's merits. The sprightly style is most readable, and ample illustrations and examples are given. The latter are especially effective as the author explains step by step each process in advertising. His discussions of printing processes and of media selection are remarkably complete. While three chapters are devoted to radio advertising alone, every medium has detailed consideration. Businessmen should find particular value in his wealth of suggestions on mail order and catalog advertising. Another high point is the chapter on selecting trademarks and brand names. Finally, the appendix contains an unusual amount of technical data of real usefulness, including a long glossary of the technical terms and slang of advertising.

This is not only a new book, but its ideas too are up to date on current advertising practices, which is important in this extremely dynamic field. One is impressed by Mr. Bridge's realistic knowledge of his field and his fine ability to present it. *Practical Advertising* is a welcome addition to the business bookshelf.

David J. Luck

An Analysis of Government Life Insurance. By Dan Mays McGill (Philadelphia: University of Pennsylvania Press, 1949, pp. xviii, 290, $3.75)

Although the Federal government has been writing insurance on soldiers and veterans for over three decades, Professor McGill is the first student of life insurance to make a comprehensive investigation of this program. The study represents the research work of Doctor McGill while he was a Fellow of the S. S. Huebner Foundation for Insurance Education at the University of Pennsylvania.

This well-organized and well-written book is divided into four sections. In Part I, there is an interesting presentation of the historical background of government life insurance, including a discussion of alternatives proposed by those who were opposed to the entrance of the government into the life insurance business. Part I continues with a discussion of the principles of risk selection, methods of sales distribution, amount limits, and policy plans of life insurance to be offered.

Throughout these chapters, the author compares and contrasts the procedures and principles of government life insurance with those of commercial life insurance. These differences are evaluated from the point of view of their effect on the policyholder and upon social policy in general. In his analyses, the author shows a thorough understanding and appreciation of the basic principles of insurance without losing sight of the importance of government life insurance as an instrument of social policy.

Part II of this book is a technical section dealing with the features of the policy and with certain statutory provisions which govern these contracts. Here again the author compares government insurance and commercial insurance when he discusses such matters as beneficiary designation, settlement options, disability provisions, non-forfeiture and loan options, reinstatement, assignment, status of proceeds, change of plan, etc. The philosophy behind or the reason for each difference is appraised so that the reader is left with a clear-cut understanding of the major considerations involved in each case.

Government life insurance represents major competition to private insurance companies in the limited market composed of young veterans. Life insurance agents are finding it difficult to sell insurance to many of the veterans who have kept their $10,000 of government insurance in force. Veterans prefer the government insurance to commercial insurance, because government insurance is cheaper.

Part III of this book analyzes the cost factors of government life insurance. Through a discussion of administration cost, investment policy, and mortality cost, the author points out how the lower cost is brought about by a government subsidy. The government subsidizes mortality costs by assuming the costs traceable to the extra hazard of military service. The author points out that mortality costs to date have been subsidized to a sum equal to 78 percent of total claims. Investment operations have been subsidized by the government through the provision of a 3 percent special treasury note for investment. The annual subsidy is estimated at $35 million, or 21 percent of current interest earnings. Finally, the government pays the entire cost of administration and there is an indirect subsidy in that government life insurance is free from taxation.

The concluding section of the book deals with: (1) the problem of conserving the business once it has been written — a major problem of government life insurance with its high lapse rate; and (2) with the problems of administration — one of the most vulnerable features and the one most often attacked by the commercial insurance agents who are opposed to the whole system of government life insurance in peacetime. Commercial life insurance agents are quick to accuse government life insurance of poor and inadequate service. The volume ends with a neat and interesting summary and critique.

The book is well worth a spot in the reading budget of anyone interested in the problems of life insurance and government administration.

Robert I. Mehr